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THE PENNSYLVANIA
Turnpike
A HISTORY

DAN CUPPER

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The Pennsylvania Turnpike

PENNSYLVANIA TURNPIKE COMMISSION

Travelers on the Pennsylvania Turnpike today scarcely think twice about the highway, much less its construction or maintenance or how it got there in the first place. But the quality of life in a state or nation, as well as the growth of its cultural and commercial dimensions, usually rests on the development of quality transportation.

As America's first superhighway, the Turnpike sparked a revolution in the way motorists, truckers, engineers and consumers view highway transportation. Simply put, it changed the American perception of time.

The Turnpike's pavement does not extend outside Pennsylvania, yet its influence reaches to every corner of the United States in the form of the 43,000-mile Interstate highway system. Although the Interstate system is a tax-supported network while the Turnpike is financed from tolls and revenue bonds, there's no disputing the fact that from an engineering and motoring standpoint, the Turnpike was the direct conceptual predecessor of the Interstate system. When the Turnpike opened on October 1, 1940, a

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THE PENNSYLVANIA
Turnpike
A HISTORY

DAN CUPPER

unique curiosity of transportation was born at a junction of circumstances. The need to put unemployed people to work during the Great Depression coincided with renewed interest in the existence of a long-abandoned right-of-way left over from a 19th century railroad war.

Now, as the Turnpike passes its 50th anniversary, it would be difficult to imagine life without an Interstate highway system and the numerous toll roads whose creation was spawned by the pioneer of superhighways. Goods and services would cost more, and many employees would be forced to live closer to their workplaces. Travel for all kinds of trips would take two, three or five times as long, and, without limited-access highway design, all driving would be more dangerous.

To understand what the Turnpike means to present-day travel both in Pennsylvania and elsewhere, one must know what preceded it and how history turned the pages of each chapter in transportation that led up to the Turnpike's planning and construction.

A night time-exposure captures a river of light, symbolizing the round-the-clock movement of traffic through Blue Mountain tunnel. This photo was featured on the cover of the Turnpike's 1960 Annual Report.

Pennsylvania Turnpike Commission (PTC)

BY CANAL BOAT

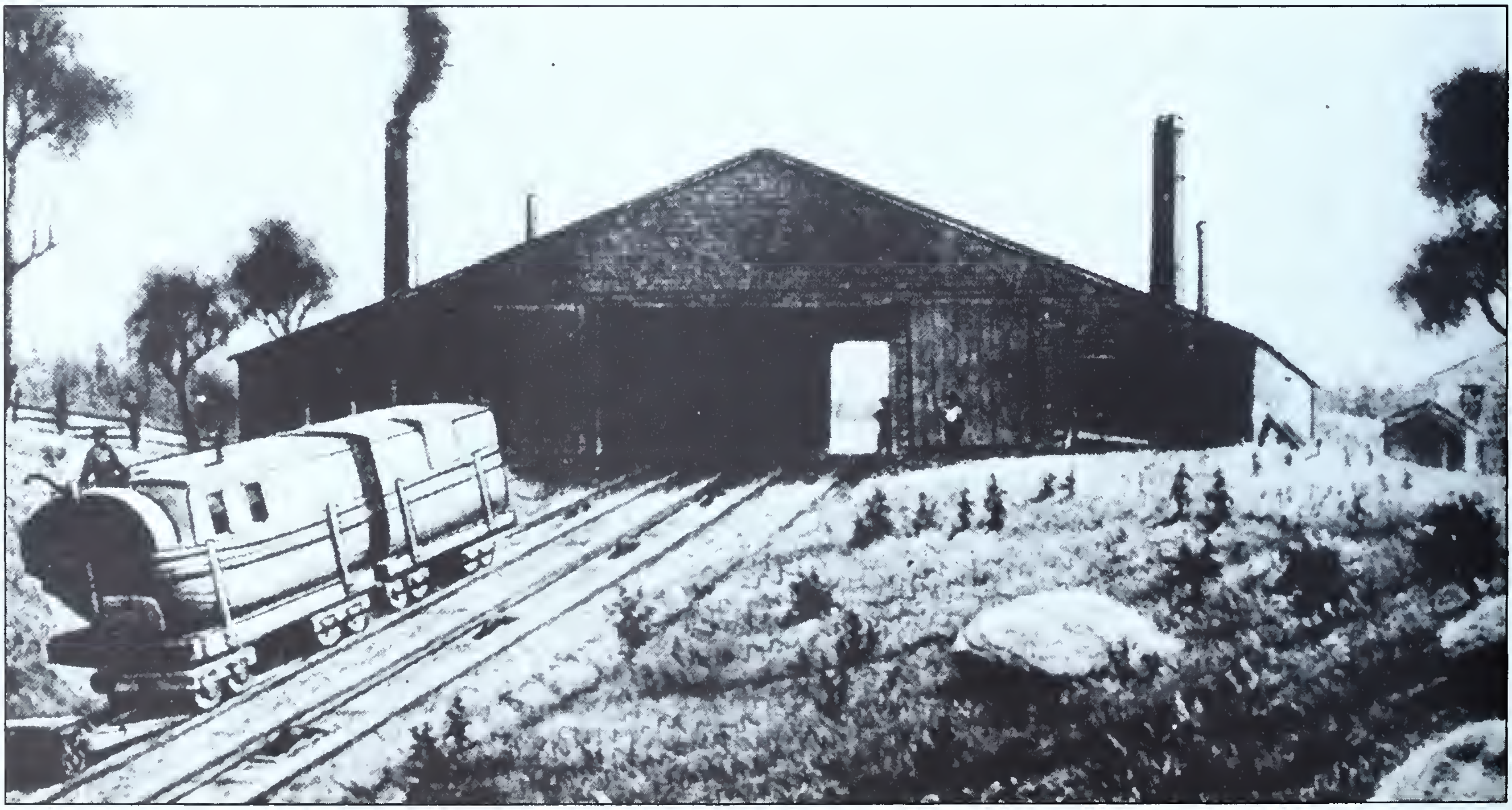
The earliest way of getting across the 300-mile expanse of what is today Pennsylvania was by foot. Indians had carved out various east-west paths that usually followed the course of least resistance, tracing river valleys and crossing the north-south ridges of the Allegheny Mountains at their lowest peaks. When New World settlers moved in during the 1700s, horses and wagons became a common sight, but the roads they used followed the Indian paths and were only wider, not better. It took a team of five or six horses 18 to 35 days, depending on whether rain had made the roads muddy, to carry two tons of goods from Philadelphia to Pittsburgh. Passengers traveling between the two cities faced a tiring, bumpy, dusty stagecoach ride.

In 1794, the Commonwealth of Pennsylvania opened a turnpike, 62 miles long, from Philadelphia to Lancaster. The first commercially and operationally successful turnpike of any distance in the young nation, it was extended about 10 miles to Columbia, on the Susquehanna River, by 1803. Early turnpikes often were paved with logs laid crosswise to the direction of travel. As rough a ride as this offered, it was still better than getting stuck in the mud.

But soon a new transportation mode made the early turnpikes obsolete. Canals — manmade waterways for passenger and freight travel — were built throughout New England and the Middle Atlantic states, beginning about 1800. Traveling or shipping by canal boat brought great improvements in time, cost and comfort, but navigation stopped each winter when the waterways froze.

Among the most notable of these were the Erie Canal, which opened the interior of New York state to trade with New York City, and the Chesapeake & Ohio Canal, which led westward into Maryland. In Pennsylvania, the state built and operated a joint canal-railroad system known as the Main Line of Public Works, from which Philadelphia's Main Line communities took their name. Begun in 1826 and completed in 1834, it connected Philadelphia, Harrisburg and Pittsburgh. Passengers from Philadelphia rode in horse- or steam-drawn railcars of the Philadelphia and Columbia Railroad for 82 miles to the beginning of the canal at Columbia. Then, following the Susquehanna and Juniata rivers, mulepower took the canal boats 172 miles to Hollidaysburg for a change to another horsedrawn railroad. This was the 36-mile-long Allegheny Portage Railroad, which, via 10 inclined planes, carried passengers over the 2,300-foot-high crest of Allegheny Mountain and down the other side to Johnstown. There, passengers boarded boats again for the 104-mile canal trip to Pittsburgh. The trip took 4½ days. Eventually passengers could ride all the way without a change, eating and sleeping aboard the vessels, with the boats being loaded onto railcars for those portions of the trip.

The state-owned system gradually re-



The state-owned Allegheny Portage Railroad crossed the Allegheny Mountain via 10 inclined planes like this one at the summit, east of Cresson, about 35 miles northeast of the site of today's Turnpike tunnels through the same ridge.

National Park Service

TO PITTSBURGH

placed its horsepower with steam power when practical locomotives were developed. With other improvements, this cut travel time to about 3½ days. This was a mixed blessing, however, because railroads proved to be durable and reliable in their own right. Not only were they faster than boats, but they also were kept running when winter shut down navigation. With every iron rail laid, canal fever gave way to railroad-building fever.

One interim system of that period forecast the flow of commerce over the present-day Turnpike route. The Cumberland Valley Railroad by 1837 linked Harrisburg with Chambersburg in Franklin County, roughly paralleling the line of today's Turnpike. Passengers from Philadelphia rode a succession of three railroads (the state-owned Philadelphia and Columbia; the Harrisburg, Portsmouth, Mountjoy and Lancaster; and the Cumberland Valley) for about 14 hours before arriving at Chambersburg, where they boarded one of two stagecoach lines, the Good Intent Mail Line or the Swiftsure Opposition Line, for the 150-mile, 36-hour trip over the mountains to Pittsburgh. In all, the trip took about 2½ days and was not only shorter but also cheaper than the canal voyage.

In 1839, residents of Philadelphia — worried that New York and Baltimore were already eclipsing them as outlets for trade from the west — persuaded the Pennsylvania Legislature to authorize $30,000 to survey an all-rail route to the west. Col. Charles L. Schlatter spent part of 1839 and all of 1840 and 1841 running surveys of three routes from Harrisburg to Pittsburgh — the Northern, Middle and Southern routes, two of which later would become major transportation arteries. The 320-mile Northern Route had the easiest mountain crossings (2,062 feet elevation) but was the longest of the three. The 291-mile Southern Route had the highest mountain crossings (2,677 feet elevation). As a result, the Middle Route, at 229 miles and a summit of 2,200 feet elevation, became the choice for construction of the Pennsylvania Railroad.

Chartered on April 13, 1846, the company, later nicknamed the Pennsy, pushed its rails westward from Harrisburg and eastward from Pittsburgh. On February 15, 1854, its rails directly linked those two cities, and the canal era was over. Three years later, the Pennsy bought the state's now-obsolete transportation system, integrating the useful railroad portions into its network and closing the canals.

Despite the disruption of the Civil War, the next four decades brought an unprecedented explosion of railroad-building as the relentless westward settlement of the nation got under way. On May 10, 1869, the first transcontinental railroad was completed. From 1850 to 1890, U.S. track-mileage shot up from 9,000 to 163,000, and it was in this period of railroad expansion that the birth of today's Pennsylvania Turnpike took place.

Viewed from the west, the Lemon House at the Allegheny Mountain summit gave weary travelers rest and refreshment during their 3-1/2-day journey across Pennsylvania.

State Museum of Pennsylvania

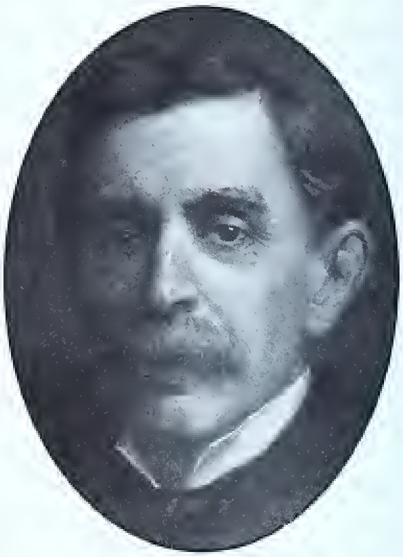
RAILROAD

Railroad-building became so popular that cut-throat competition erupted regularly. In the East, the Pennsylvania Railroad's fierce rival for east-midwest traffic was the New York Central & Hudson River Railroad, which was controlled by the Vanderbilt family of financiers. While the Pennsy linked New York and Chicago via Philadelphia, Harrisburg and Pittsburgh, the Central and related lines did so via Albany, Buffalo and Cleveland.

A favorite tactic used by speculators and competitors to challenge a railroad's grip on a region was to build new, duplicative railroads into the same area. If the invading line were completed, it would siphon off traffic and revenue from the established carrier. If the established carrier wanted to avoid competition, it might simply buy out the stock of the newcomer to control it or close it — at a handsome profit, of course, to the challenger's financial backers.

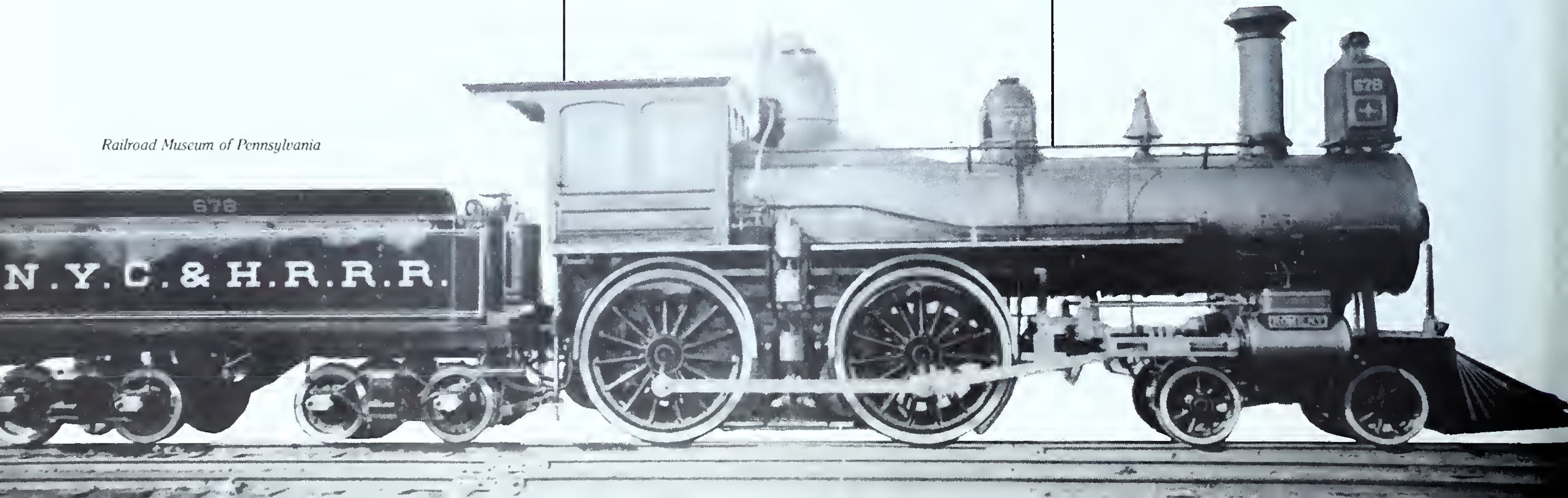
New York Central's William H. Vanderbilt

It was in this climate that the route for today's Turnpike came into existence. William Vanderbilt, angered at the Pennsy because he believed it was gaining control of a line along the west shore of the Hudson River to challenge his NYC&HR on the east side, began retaliating around 1881 or 1882 by invading the Pennsy's territory. Together with Pittsburgh industrialists Andrew Carnegie (a former Pennsy telegrapher who had built a steel empire and was angry over what he considered to be outrageously high freight rates) and Henry Oliver of the Oliver Iron Works, Vanderbilt formed a syndicate to build a $15 million railroad — the South Pennsylvania Railroad — to directly parallel the Pennsy main line.

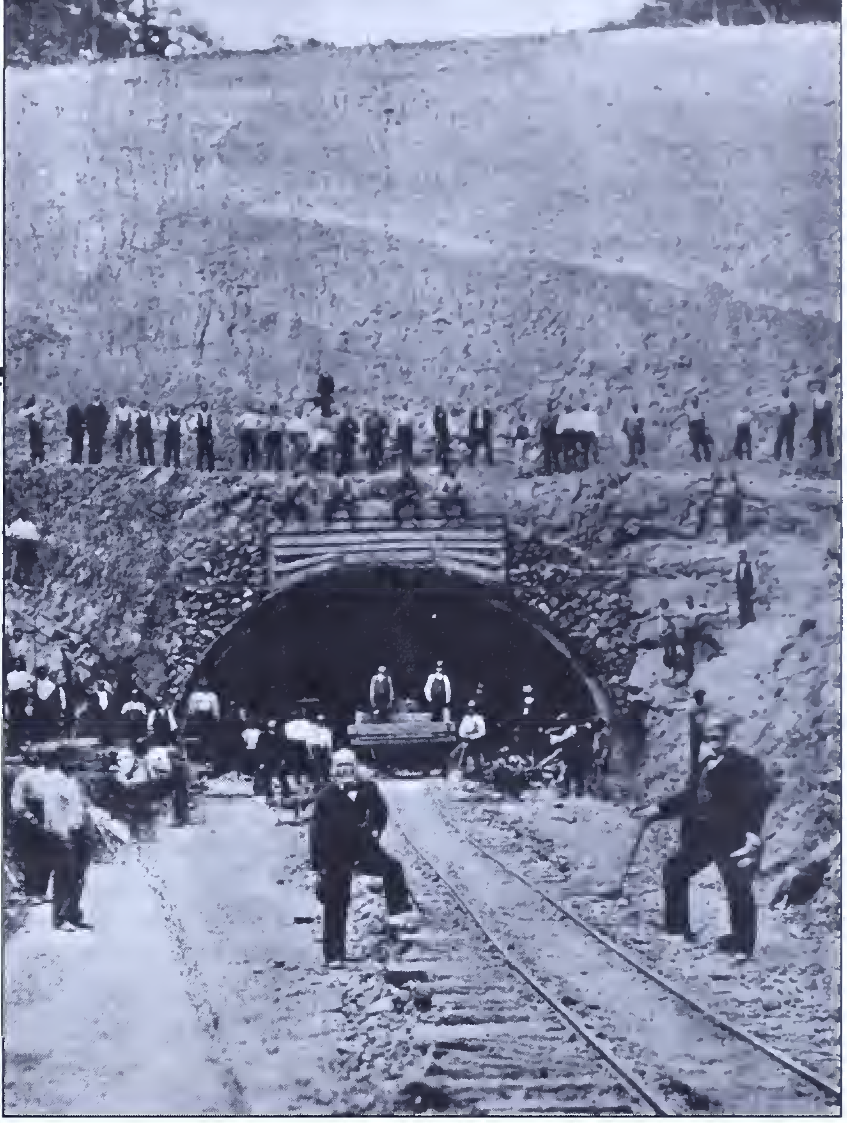

Pennsylvania Railroad's George B. Roberts

Many Pittsburgh interests, hoping for the fruits of competition, backed the project. On the west, the South Pennsylvania would connect at Port Perry with a subsidiary of the Vanderbilt-controlled Pittsburgh & Lake Erie Railroad to gain access to the markets of Pittsburgh and beyond, to Vanderbilt's own main line to Chicago. As for the eastern end, Vanderbilt already was allied with Franklin B. Gowen, president of the Philadelphia & Reading Railroad, which offered access, directly or through connections, from Harrisburg to Philadelphia and New York.

After extensive alignment surveys ordered by Vanderbilt were carried out, the double-track right-of-way chosen for the South Pennsylvania Railroad was none other than a variation of Col. Schlatter's almost-forgotten Southern Route. Construction contracts for a bridge over the Susquehanna River at Harrisburg and for seven of nine planned tunnels were awarded on September 6, 1883, and work began almost immediately. Carloads of equipment for the bridge construction rolled into Harrisburg — over


Railroad Museum of Pennsylvania

WARS



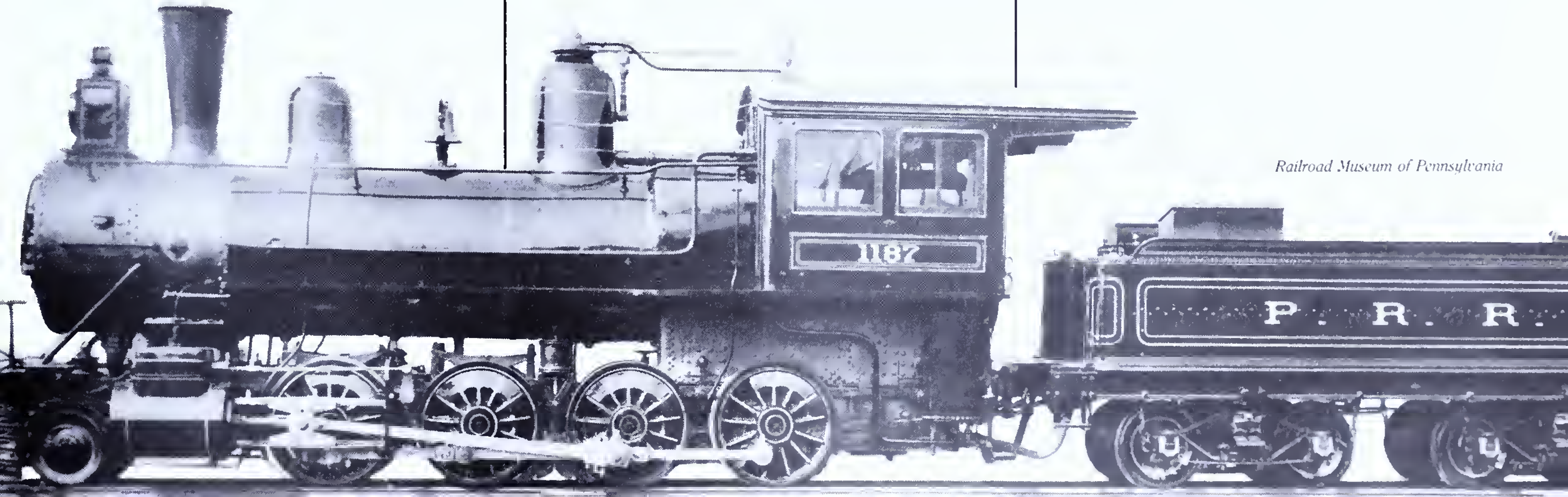
Pittsburgh industrialist Andrew Carnegie, left, visits construction site at the west portal of Ray's Hill Tunnel on the South Pennsylvania Railroad. Pennsylvania State Archives

Gowen's Philadelphia & Reading, of course, not over the Pennsy.

Excavation began at each end of the tunnels in early 1884. Thousands of laborers, many of them Hungarian, Italian and black, poured into the mountains to work at $1.25 for a 10-hour day. Accounts of the workforce size vary widely, from 2,300 to 6,500 (the most likely range), on up to 15,000.

Through 1884 and 1885 the blasting and building continued, and the line inched toward completion, which was projected for July 1, 1886. But on Wall Street, events were shaping up that would burst the bubble. Banker J. Pierpont Morgan, who had established himself in financial circles and won a seat on the board of Vanderbilt's NYC&HR Railroad, arranged a meeting aboard his yacht "Corsair" on the Hudson River in July of 1885, during which he tried to mediate the spiteful competition. It was clear to him that the wild overbuilding of competitive railroads did nothing to inspire investor confidence, and only weakened existing lines. At this meeting, Morgan gathered the president of Vanderbilt's NYC&HR, Chauncey Depew, and the Pennsylvania's president, George Roberts, finally crafting a truce. The agreement was that the South Pennsylvania would be sold to the Pennsy, and Vanderbilt would acquire the West Shore railroad. On September 12, with 60 percent of the grading completed, and 4½ miles of tunnel excavated, work was halted so abruptly that laborers left their tools where they lay. A total of $10 million had been spent, and 26 workers' lives were lost, in the unfinished project that became known as "Vanderbilt's Folly." But within three months, it no longer made any difference to him — William Vanderbilt was dead.

In the legal and financial maneuverings that followed over the next decade, the Pennsy and the Baltimore & Ohio Railroad jointly acquired the property. A shred of it was used by a short-lived short line railroad, the Pittsburgh, Westmoreland & Somerset, in the early 1900s. In its aim to link Somerset with Ligonier and connections there for Pittsburgh, PW&S even completed Quemahoning Tunnel. (None of the other tunnel workings had been completed all the way through, although some of Vanderbilt's laborers had claimed they were close enough to hear the sound of crews on the other side). Most of the line simply reverted to nature, with water filling many of the tunnels and undergrowth obscuring the roadbed. The engineers who had laid out and designed the South Pennsylvania project were bitter over its premature demise, which they considered to be an insult to their profession. One of them spoke its epitaph: "And here, for the time being, and probably for a long time to come, is smothered the best line of railroad between the Ohio Valley and the Atlantic that has ever been or can be projected, built or operated."



Railroad Museum of Pennsylvania

AN IDEA

With the invention of the automobile in various forms in the 1890s, motoring became popular as a sport. (Twenty years later, much the same attitude would prevail toward aviation.) As time passed, however, it grew more practical, acceptable and affordable, slowly changing the travel patterns of America. By 1913, there were 600,000 automobiles in existence in the nation, and that year Henry Ford introduced the mass-produced assembly-line technique of building vehicles, almost overnight turning Detroit's name into a symbol of automotive productivity.

At the same time, motoring gained in credibility as a means of transportation, just as flying eventually would lose its image as a sporting activity. With more and more cars hitting the road, public pressure for hard-surfaced highways grew stronger, and Pennsylvania was one of the first states to establish a highway department, in 1903. By the 1920s, the horse and buggy, the trolley car and the local passenger train were beginning to slip, slightly but ever so surely, from the consciousness of the traveling public.

Although the prosperity of the '20s gave way to the hardships of the Great Depression, nothing stopped the growing popularity of automobiles, even if fewer Americans could afford new cars. A sluggish economy brought on by the stock market crash of 1929 led to unemployment and poverty on a scale previously unknown. Millions of people were out of work. This was considered to be a failure of private enterprise and big business, and it was not surprising that in 1932 a Democrat, Franklin D. Roosevelt, was elected to the presidency. His strategy for recovery rested on the concept of multiple federal jobs-creation programs, collectively called the New Deal, and the spark of the idea for a Pennsylvania Turnpike emerged from a New Deal philosophy.

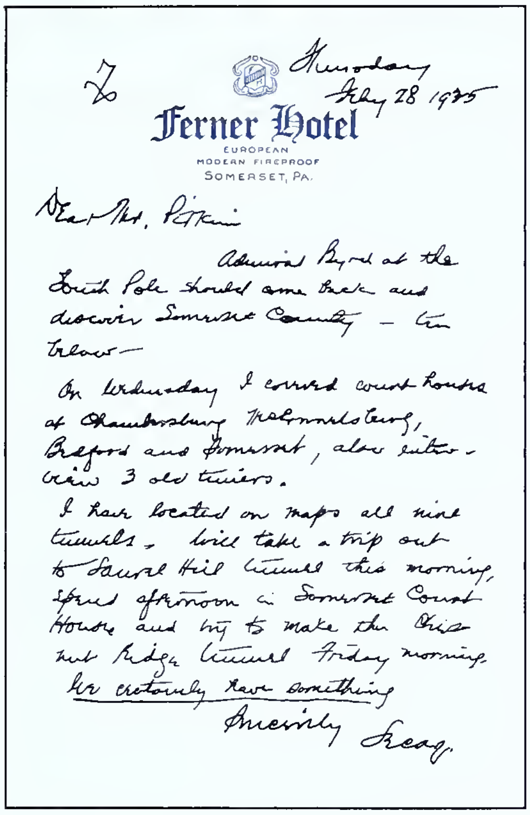
Pennsylvania had an agency known as the State Planning Board, whose mission was to track statewide trends in housing, transportation, utilities, social services and land and water use, and to propose projects that could, under one of the various New Deal banners, lower unemployment and put people to work. Beginning in late 1934, planning board employee Victor Lecoq and William Sutherland of the Pennsylvania Motor Truck Association proposed the idea of turning the old Vanderbilt roadbed and tunnels into a toll highway. There was speculation that Roosevelt's administration would allocate $350 million to Pennsylvania for federal work-relief projects, and the Turnpike proposal was an appealing candidate.

Lecoq, Sutherland and newly elected state Representative Cliff S. Patterson of Monongahela, who took office in January 1935, had discussed the idea for some time. One account claims that the whole concept began one night after a legislative session when the three went out for a late dinner in Harrisburg. Patterson was already familiar with the tortuous mountain drive from his home district to Harrisburg via U.S. Route 30, the Lincoln Highway. In winter it was icy and hazardous; in summer, fog could cloud a motorist's vision. They kicked around the idea of using the abandoned Vanderbilt bridge piers in the Susquehanna River for a

On January 24, 1938, preliminary work is under way inside the west portal of Tuscarora Mountain Tunnel. The arched oak framework is left over from Vanderbilt days. Pennsylvania State Archives

A small part of the roadbed graded in 1885 was used for a short line railroad near Somerset around the turn of the century. The rotting crossties shown here suggest that this photo was taken along the short stretch used by that carrier. Pennsylvania State Archives

REBORN



Zo

Thursday
Feby 28 1935

Ferner Hotel
EUROPEAN
MODERN FIREPROOF
SOMERSET, PA.

Dear Mr. Pitkin

Admiral Byrd at the South Pole should come back and discover Somerset County — ten below —

On Wednesday I covered court houses at Chambersburg McConnellsburg, Bedford and Somerset, also interview 3 old timers.

I have located on maps all nine tunnels, will take a trip out to Laurel Hill tunnel this morning, spend afternoon in Somerset Court House and try to make the Chestnut Ridge tunnel Friday morning.

We certainly have something

Sincerely
Lecoq.

On February 28, 1935, Victor Lecoq was in the midst of an exploratory visit to inspect the roadbed and tunnels when, from a hotel in Somerset, he wrote back to his supervisor in Harrisburg: "We certainly have something." Pennsylvania State Archives

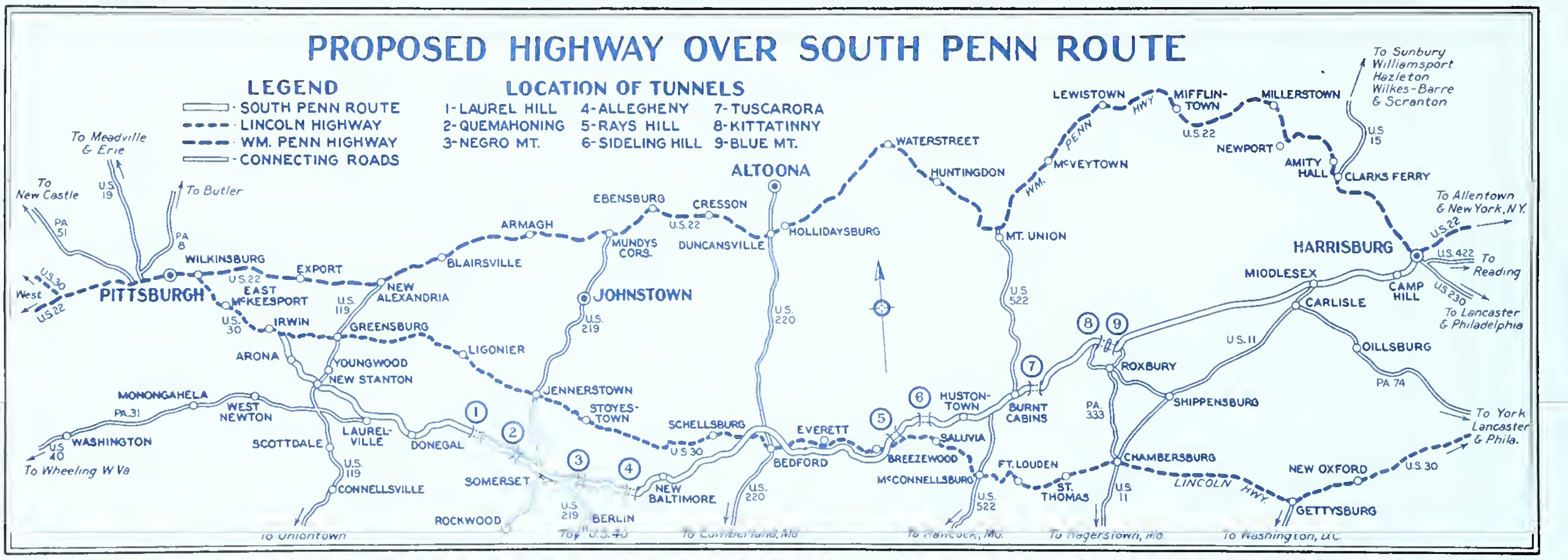
new toll bridge, but the conversation soon progressed to the abandoned right-of-way and tunnels. Lecoq had learned about them from a colleague, Edward H. Flickinger, a city planner in the state's Department of Internal Affairs. A native of Franklin County's Path Valley, Flickinger and his brother, Joseph, as children had often played along the abandoned right-of-way and in the tunnels. In the summer of 1933 Edward visited his brother, who had stayed in the area to take over the family orchard business. Together they revisited their boyhood haunts, and Edward carried the freshly renewed images in his mind back to Harrisburg, where he told Lecoq about the tunnels, and, according to one account, proposed their use as a superhighway.

However the idea came about, Patterson thought it was a good one, and on April 23, 1935, he introduced House Resolution No. 138 to authorize a feasibility study. He was its sole sponsor. As if on cue, the Associated Press two days later began transmitting a series of 10 dispatches to newspapers around the state by reporter David Fernsler, who had walked portions of the roadbed, seen the tunnels himself, and interviewed people still living who had worked on Vanderbilt's stillborn dream. In the stories, Fernsler referred to the proposed project in several ways: "weather-proof tunnel highway" and "forget-the-weather highway." That he grasped the concept at hand was reflected in an excerpt from his dispatch of April 2: "The traveler of tomorrow will forget whatever weather the mountain tops may be making for themselves."

Edward N. Jones, state director for one of the New Deal programs, the Works Progress Administration, teamed with Warren Van Dyke, then Pennsylvania's secretary of highways, to seek federal funds for a survey. Further, WPA chief Harry Hopkins not only sold the idea to Roosevelt, but he also won the president's support for a loan from another New Deal agency, the Reconstruction Finance Corporation, to aid construction. A WPA grant was awarded, and on January 27, 1936, a new generation of survey crews began invading the mountains and hollows of south-central Pennsylvania, as their predecessors had done a half-century earlier.

Although the cost of construction was estimated at $60 million to $70 million, the surveyors' report was favorable from an engineering standpoint, and on May 21, 1937, Governor George Earle signed a bill into law as Act 211, authorizing creation of a Turnpike Commission. The measure provided no funding — all revenue was to be raised by other means: federal grants, bonds and tolls as security for the bonds. This was because Pennsylvania's constitution prohibited the state from incurring more than $1 million of bonded debt without a referendum. However, to get the project rolling, the state highway department was directed to provide support services, which would later be repaid from Turnpike revenue. On June 4, the initial Commission members were named. Although state WPA chief Edward N. Jones was believed to be in line for the chairmanship, it was awarded instead to oil-industry executive Walter A. Jones of Pittsburgh. Born in 1875 in Kent, Ohio, Walter Adelbert Jones had built a career in the glass industry, and later became an executive of the Michael

The narrow valley between Blue Mountain and Kittatinny Mountain, as it appeared on November 5, 1937. View looks eastward from Kittatinny tunnel entrance toward west portal of Blue Mountain tunnel. In its formative days, the Turnpike was often simply called "the tunnel highway." Pennsylvania State Archives



Early publicity maps showed the proposed route having nine tunnels; as built, the Turnpike used only seven. Quemahoning and Negro Mountain were bypassed. PTC

Benedum oil empire. A millionaire as well as a politician, he was a personal friend of presidents Warren Harding and Calvin Coolidge, and was a Republican presidential elector in 1924. Later he switched political parties and was one of the few people who could enter Franklin Roosevelt's office without the formality of knocking. He maintained residences in Washington (the Mayflower hotel), New York (the Waldorf-Astoria), Harrisburg (the Penn Harris hotel) and Pittsburgh (the Duquesne Club). The others named to the commission were Frank Bebout, a Monongahela merchant who was an associate of Patterson's; Charles T. Carpenter of Chester, a former member of the state Milk Control Board; and Samuel W. Marshall of Norristown, who had been chief engineer for the state highway department. A fifth seat on the commission was reserved for the state highway secretary, in this case, Van Dyke, who served as an ex-officio member. Marshall resigned 12 days later to become the commission's chief engineer. Edward N. Jones twice was nominated to fill the seat but the Senate twice declined to confirm him, and Marshall's seat eventually was occupied by another appointee, Thomas J. Evans of Coaldale.

Confident that project financing would be arranged, the commission awarded a contract on September 19, 1937, to Pittsburgh contractor George Vang for preparatory water removal from the old tunnels.

Because of the huge sums of money involved, some back-alley battles broke out over how the project would be financed, and who would do the work. Some people, including WPA state director Jones, advocated the idea of having WPA forces handle construction, even going so far as to secure Roosevelt's blessing on that plan. But questions surfaced over WPA's ability to get such a massive job done, especially with unskilled labor and a plan of equipment leasing that held potential for a conflict of interest. The commission very nearly signed a contract with the WPA, which was ready to issue a $24 million grant, but an executive of the Pennsylvania highway contractors' group, A. Earl O'Brien, personally intervened. He met with the heads of two other New Deal agencies to propose an alternate arrangement using the RFC and the Public Works Administration. In the end, the concept of having private enterprise — the road-building industry — handle the job under contracts won out, and the WPA, except for a landscaping project at the end of construction, was out of the picture.

Commercial financial houses were not interested in selling Turnpike bonds without the full faith and credit of the Commonwealth. The project's magnitude wasn't really the problem — the $35 million Golden Gate Bridge near San Francisco, a toll facility, was opened in May 1937. But, as one observer pointed out, bankers couldn't imagine a toll bridge 160 miles long. Nobody had ever built a toll highway of this length, cost and scale before, and it was not at all clear that it would or could pay for itself. A preliminary $60 million bond offering was so weakly received that it was canceled.

At Roosevelt's direction, the RFC offered to buy $35 million (later increased to $40.8 million) in Turnpike bonds at 3¾ percent interest (considered high at the time, again because of the unproven nature of the toll superhighway concept), but this agreement hinged on the commission's ability to win a Public Works Administration grant to cover 45 percent of the construction cost. PWA was a federal program that made grants for work to be performed under contract rather than directly employing people.

Commission Chairman Walter A. Jones was dealing personally with Roosevelt's Interior Secretary, Harold L. Ickes, who also oversaw the WPA. Ickes assured Jones that, with the clouds of war in Europe on the horizon, Roosevelt was convinced of the strategic military value of the Turnpike and would be good for the $26 million (later $29 million) needed to satisfy the RFC.

Jones later wrote about a snag that nearly unraveled everything: "One day our hopes seemed about to be dashed. Mr. Ickes telephoned me. 'I have bad news,' he said, 'the President will give you only $20 million.' Mr. Ickes showed me a radiogram from San Francisco where President Roosevelt was about to put out to sea for a prolonged vacation trip. It looked as if the arrangement was going to fall through unless we could get the President to change his mind.

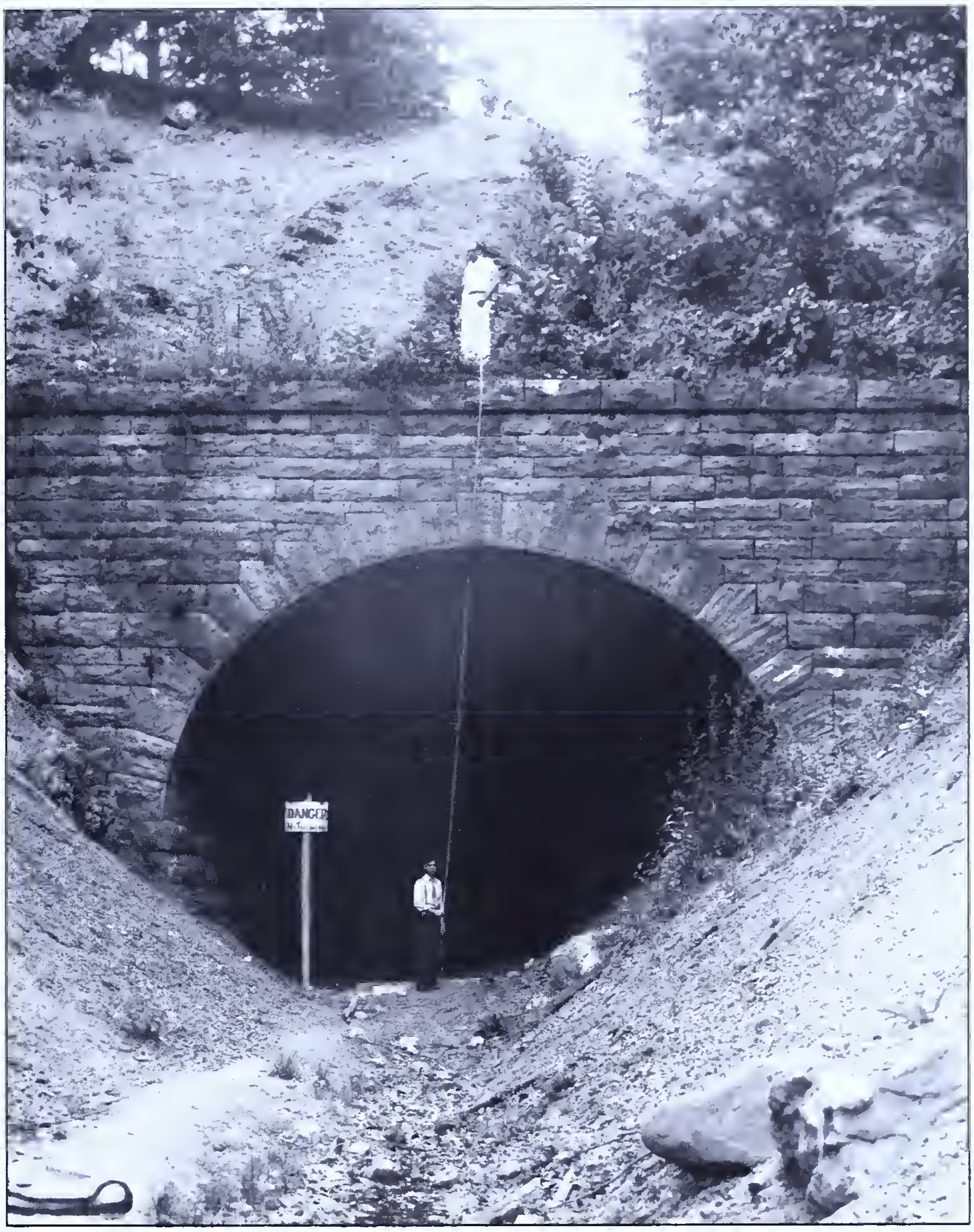
"We immediately dispatched a wire to the President. Fortunately, it reached him a few minutes before his cruiser was set to sail. Mr. Roosevelt's reply was: 'I'll let you have $25 million.' And then Mr. Ickes took the responsibility of adding the last million required to build the road. Financing of the Pennsylvania Turnpike had been completed." Final federal approval of financing came from Washington on October 10, 1938. Just four days later, the first contract, covering a 10-mile stretch in Cumberland County near Shippensburg, was advertised, and bids were received October 26. The contract, for

$458,058, was awarded to the L.M. Hutchison Co. of Mount Union the same day, and groundbreaking was scheduled for the next day, to comply with a starting date specified in the PWA grant.

But there was a hitch. As Jones later recounted: "We did not have a single acre of right-of-way at that hour. But through the efforts of the commission's general counsel, John D. Faller, the problem was solved. He rushed over into Cumberland County and related the story to the owner of a certain farm through which we had laid out the right-of-way and received permission to proceed.

"We drove out to this farm where 200 or 300 of the farmers and the neighboring people gathered on the spot where we turned the first shovel of earth. As we walked up the hill a lady came forward. Her name was Mrs. Eberly, the wife of the farmer on whose land we were starting. She had five children, ranging in age from 2 to 10 years, clinging to her. She wanted the autograph of each member of the commission and of the PWA and RFC representatives.

"I said to her, 'Mrs. Eberly, why do you want these,' and her answer has been the inspiration from that day to this that has urged the commission on. She said, 'Mr. Jones, I want these autographs so that my children can say that they saw history being made that day when the greatest highway, a new era of road building, was started.'"



Right: Some of Vanderbilt's tunnels were complete enough that they had stone-faced portals, such as at the east side of Tuscarora Mountain. On August 9, 1938, workers measure the opening at 19 feet from ground level to keystone. Pennsylvania State Archives

Commission officials meet on October 10, 1938, to sign documents approving the crucial federal funding offered by President Roosevelt. From left are: Commission nominee Edward N. Jones; Commissioner Frank Bebout; Chief Counsel John Faller; Commission Chairman Walter A. Jones; Chief Engineer Samuel Marshall; Secretary of Highways Roy Brownmiller; and Commissioner Charles Carpenter. Pennsylvania State Archives

SHAPING AMERICA'S

Until ground was broken, the Turnpike Commission had survived on federal planning-grant money, loans of staff and cash from the Pennsylvania Department of Highways and the loan of a few engineers from private industry. Now, with real money in the bank, engineering drawings could be inked in, land could be acquired, and dirt could really start to fly. At first, Chief Engineer Samuel W. Marshall supervised perhaps 115 staff engineers, but within months the number grew to more than 1,100. This was necessary if the commission was to make the most of the construction-season cycle and still meet the early deadline for completion set by the federal government. At first, planners figured on a three- to four-year construction period, but in the process of approving its $29 million grant, the Public Works Administration set a completion date of May 1, 1940 (later amended to the end of June), by which time the highway should be "substantially complete." This imposed a very short deadline — about 20 months — on a very small agency with a very large project on its hands.

Further, the engineers were expected to employ design specifications and safety standards that only had been imagined before in this country. It hadn't been so long ago that highways were deliberately built with flat curves to discourage speeding. Now, engineers were asked to design easy grades, to allow year-round use by both cars and trucks, and long, sweeping curves, to give ample room for higher speeds and safe stopping distances. It was one thing to envision these features on a highway reaching across the nation's Great Plains, but quite another to do so in a setting of 2,800-foot-high mountains and narrow, twisting river valleys, most of which ran perpendicular to the intended route. It would mean carving out tunnels and cuts (deep man-made ravines) to conquer mountains, and building many bridges and fills (earthen man-made embankments) to cross valleys. The challenge was to keep the road out of the clouds and above flood level.

The engineers decided on these standards:

- A right-of-way width of 200 feet.
- A four-lane divided configuration, with 12-foot-wide concrete traffic lanes, a 10-foot-wide median strip and 10-foot-wide berms, for a total roadway width of 78 feet. (Early plans called for 10-foot-wide lanes, and just a four-foot-wide median strip. Also, a cheaper design that used two concrete lanes and two asphalt lanes was dropped.)
- A maximum grade of 3 percent (three feet of climb for every 100 feet of forward travel), compared to hills as steep as 9 to 12 percent on the old two-lane Lincoln (U.S. Route 30) and William Penn (U.S. Route 22) highways.
- A maximum curvature of 6 degrees, most of which occurred on the climb from New Baltimore to Allegheny Tunnel;

Walter Jones, first commission chairman, turns the ceremonial spadeful of earth on October 27, 1938, on a farm in Cumberland County. Little did these planners realize the transportation revolution they were about to set in motion.

Pennsylvania State Archives

most curves were in the 3-to-4-degree range.

- Substantial superelevation, or banking, on the curves.
- Limited access, with 1,200-foot-long entrance and exit ramps to provide plenty of distance for accelerating and decelerating.
- A minimum 600-foot sight distance from motorist to traffic ahead.
- No cross streets, driveways, traffic signals, crosswalks or railroad grade crossings. All vehicular or pedestrian cross traffic would go over or under the Turnpike. Along the same distance via the parallel Lincoln Highway and U.S. Route 11, there were 939 cross-streets, 12 railroad crossings and 25 traffic signals.

One overriding principle set this highway aside from all others: It was considered to be a single, unified design task from one end to the other. Charles Noble, a design engineer for the commission who later became chief engineer of the New Jersey Highway Department and the New Jersey Turnpike Authority, described this feature in the July 1940 issue of *Civil Engineering* magazine: "Unlike the existing highway systems of the United States, in which design standards fluctuate every few miles, depending on the date of construction, the Turnpike will have the same design characteristics throughout its 160-mile length. Every effort has been directed towards securing uniform and consistent operating conditions for the motorist."

Almost as an afterthought, Noble added this observation: "In fact, the design was attacked from the viewpoint of motor-car operation and the human frailty of the driver, rather than from that of the difficulty of the terrain and method of construction. This policy of design, based on vehicle operation, is relatively new."

There was only one place in the United States that anybody had seen anything like this — at the General Motors Corporation's "Futurama" exhibit at the 1939-40 World's Fair on Long Island. Over the course of the fair, 16 million people lined up to take a 16-minute narrated ride through a miniature animated diorama that offered a vision of life in 1960. Created by industrial designer Norman Bel Geddes, it featured thousands of tiny cars that raced along limited-access superhighways. It was the hit of the fair, and many visitors came solely to ride through the Futurama.

Walter Adelbert Jones, first commission chairman.

Pennsylvania State Archives

Many of the principles seen there, and used in the Turnpike design, had been incorporated into Germany's autobahns, and on the 15-mile-long Bronx River Parkway in New York City, which was the nation's first parkway. Begun in 1933, the autobahns were built for military and ideological purposes. Designed for 100 mph travel, they eventually extended for more than 2,300 miles. The Bronx River Parkway, completed in 1923, was designed to permit limited access to preserve scenic values and had a speed limit of only 35 mph, but it also improved traffic capacity.

Aside from preliminary Turnpike surveyors' work and the job of pumping water from the abandoned South Pennsylvania tunnels so their condition could be assessed, no actual clearing of the right-of-way or excavation had taken place. But that all changed when the commission awarded Contract No. 1 to the L.M. Hutchison company. Soon the commission found itself doing business with owners of 730 properties to acquire land needed for the superhighway. Houses, farms and at least one coal mine were acquired under eminent domain proceedings. Pennsylvania was one of the few states that then allowed an agency to condemn property with or without coming to terms with the owner, by posting bond with a court and agreeing to negotiate a settlement later. Without this ability, the job could never have been finished in such a short time.

Repeating the scenario of 54 years earlier, thousands of construction workers poured into Pennsylvania's southern tier of counties, recalling the frenzied Vanderbilt episode. One Turnpike contractor, Mason & Hanger of New York City, had worked on the original railroad project. Similarly, at least one man was documented as having worked on both the South Pennsylvania and Pennsylvania Turnpike projects.

A preliminary headquarters was set up at the state Highway Department's Hollidaysburg office, then field offices were established at Shippensburg, Everett, Somerset and Mount Pleasant.

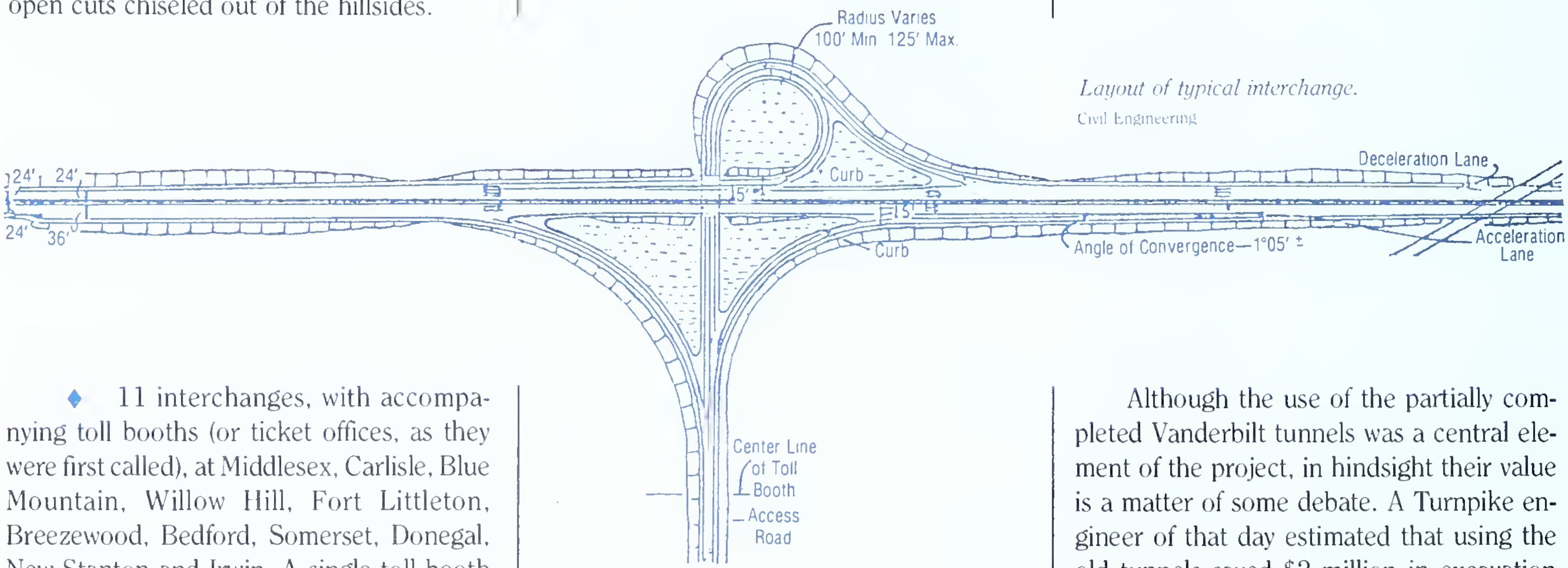
By July of 1939, all 160 miles of highway, seven tunnels and more than 300 structures were under contract, and a month later every last bit of the project was under construction. Contracts were awarded to 155 companies or subcontractors from 18 states. Concrete paving was begun on August 31, 1939. By the spring of 1940, 15,000 workers were on the job. Housing in rural southcentral and southwestern Pennsylvania was so scarce that some employees lived, with their families, in tents near the construction sites. Hourly wages ranged from 52½ cents for unskilled labor to $1.40 for heavy equipment operators, compared to the $1.25 a day Vanderbilt paid back in the 1880s.

With the deadline uppermost in everyone's mind, contractors worked night and day — usually two shifts a day, and often, three. Because little commercial electricity was available in remote areas, portable generators cranked out power for floodlights. Resident engineers and inspectors manned each site around the clock. The days of mixing and stirring cement by hand were still well within recall of many contractors on the job, but none of that would be seen on this project. Approximately $30 million worth of what was then the most modern roadbuilding equipment was used.

The project called for construction of:

◆ 160 miles of four-lane all-concrete highway, from Middlesex in Cumberland County, 15 miles west of Harrisburg, to Irwin in Westmoreland County, about 20 miles east of Pittsburgh.

◆ Seven two-lane tunnels, with a total length of about 6.7 miles. Six were former South Pennsylvania tunnels, but a seventh, at Allegheny Mountain, was built 85 feet south of the old railroad tunnel, which was not used because its interior was considered to be unstable and dangerous. From east to west, tunnels were built at Blue Mountain, Kittatinny Mountain, Tuscarora Mountain, Sideling Hill, Ray's Hill, Allegheny Mountain and Laurel Hill. Two other former South Pennsylvania tunnels, Quemahoning Mountain and Negro Mountain, were bypassed with open cuts chiseled out of the hillsides.



Layout of typical interchange.
Civil Engineering

◆ 11 interchanges, with accompanying toll booths (or ticket offices, as they were first called), at Middlesex, Carlisle, Blue Mountain, Willow Hill, Fort Littleton, Breezewood, Bedford, Somerset, Donegal, New Stanton and Irwin. A single toll booth served both Carlisle and Middlesex.

◆ 10 service plazas, located 25–30 miles apart and costing a total of $500,000, at which travelers could eat or buy fuel. Rather than directly operate these plazas, the commission licensed them to Standard Oil Co. of Pennsylvania, which ran the gas stations and subcontracted the dining areas and gift shops to the Howard Johnson's restaurant firm. Borrowing a page from the autobahns, planners designed the buildings to resemble regional architecture — in this case, early Pennsylvania stone houses.

Completing the tunnels was the most conspicuous and dramatic aspect of the project. None of the six South Pennsylvania tunnels used for the Turnpike had been drilled all the way from end to end in 1885 — all had been excavated from both ends but not "holed through." The shortest tunnel was Ray's Hill, at 3,517 feet, and the longest was Sideling Hill, at 6,792 feet (final lengths were slightly different). The uncompleted sections ranged from 551 feet in Kittatinny Mountain, to 3,379 feet in Sideling Hill.

In addition, the railroad's intent was to build a double-track line with double-track tunnels, but as both corporate commitment and cash began to weaken in 1885, orders were handed down in mid-construction to excavate for only a single-track width, so turnpike engineers found the tunnels with wide portals, or entranceways, but narrower in their deepest reaches.

In a round-the-clock cycle, contractors worked on an assembly-line basis at each tunnel. One team spent six hours drilling about 100 holes 10 feet deep into hard rock, into which they placed some 800 to 1,100 pounds of explosives. After the explosives were detonated, a following work shift cleared the rock and rubble loosened by the blast. Softer rock required fewer holes and less drilling time, sometimes as little as two hours, so that the average daily progress in tunnel work ranged from 11.3 feet to 35.7 feet. In addition to enlarging and reshaping the tunnel bores to a 23-foot width and 14-foot height, the contractors also reinforced the walls and floors with concrete lining. Buildings housing huge ventilating fans were erected at the tunnel portals to blow fresh air through the tunnels. When the tunnels went into operation, they would ensure that carbon monoxide concentrations from vehicle exhaust remained at levels safe for motorists.

John Foor of Breezewood, who made a career in Turnpike maintenance, grew up in North Point, Bedford County, and remembers his father, Dewey E. Foor, going off to work at the Ray's Hill tunnel excavation. Like many of those who found work in the tunnels, the father had been a coal miner who was idled because of a strike called against the coal industry by organized-labor leader John L. Lewis. Foor recalls that his father left each morning by horseback or muleback for the 12-mile trip to the Ray's Hill worksite. His job there was to place reinforcing timbers and cribbing in the tunnel cavity. Ray's Hill was the first tunnel to be "holed through," on January 22, 1940.

Kittatinny Tunnel caused a problem for its contractor when workers struck a watery seam of sand, releasing 500 to 1,000 cubic yards of red, green and black sand into the tunnel. Not only did it represent a massive cleanup job and a delay, but Turnpike engineers also had to redesign the tunnel walls for that section.

Although the use of the partially completed Vanderbilt tunnels was a central element of the project, in hindsight their value is a matter of some debate. A Turnpike engineer of that day estimated that using the old tunnels saved $2 million in excavation costs, or the same amount of money it cost the commission to buy the abandoned railroad property. Yet over the years engineers have suggested that the concept was primarily designed to catch the public's fancy, citing contractors who considered them to be more dangerous to work in than a completely new tunnel they cut themselves. Danger was never far away, a fact underscored when four men died in a cave-in at Laurel Hill Tunnel. In all, nearly two dozen men died in building the highway.

The tunnels were not the only places where massive excavation was done. Just east of Everett, Turnpike engineers considered drilling a tunnel through a large hillside named Clear Ridge, but instead decided to carve a large open cut, 153 feet deep and a half-mile long. No highway cut that deep had ever been attempted in the United States. Noting this distinction, promoters quickly

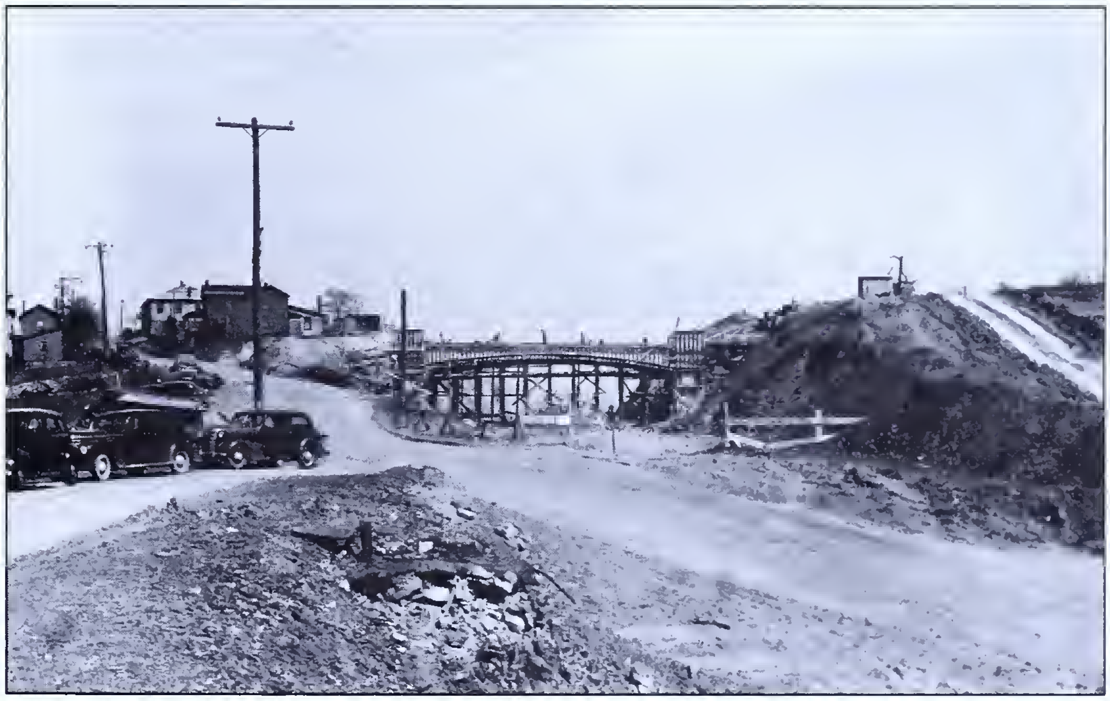
The crew of the L.M. Hutchison company, first contractor on the Turnpike, pauses for a group portrait on November 30, 1938. Pennsylvania State Archives

termed it "Little Panama" in an attempt to trade on the fame of the Panama Canal. Although it did require the removal of 1.1 million cubic yards of earth, it in no way compared with the 200 million cubic yards excavated during construction of the Panama Canal, completed in 1914. Today people know it as either Clear Ridge Cut or Corbisello Cut, after N.R. Corbisello, the Binghamton, N.Y., contractor whose firm built it.

The high fills, or earthen embankments needed to carry the highway across low-lying areas, were carefully laid and compacted each time a new layer of material was dumped, to avoid any shifting or settling after the nine-inch-thick roadway was poured. About 13 miles of highway was laid in 1939, but wet weather in the spring of 1940 slowed construction. By May 8, the total had grown only to 30 miles. But soon 50 paving units were laying two, then 3½, miles of road a day. Of the 160 miles of Turnpike roadway, 110 miles fell on straightaways, and the longest single straight stretch was nearly 13 miles in Cumberland County, just east of the Blue Mountain interchange.

Bridges and culverts were important, too — 307 of them were designed and built, ranging from six feet to 600 feet in length. Twenty-one early overpasses were built with two spans resting on a supporting pier that stood in the median strip, but federal officials objected to that design, saying it posed a potential collision hazard, and the arrangement for subsequent overpasses was changed. As a result, most of the local roads passing over the Turnpike used single-span bridges, many of them built of concrete with a graceful, gently arched design.

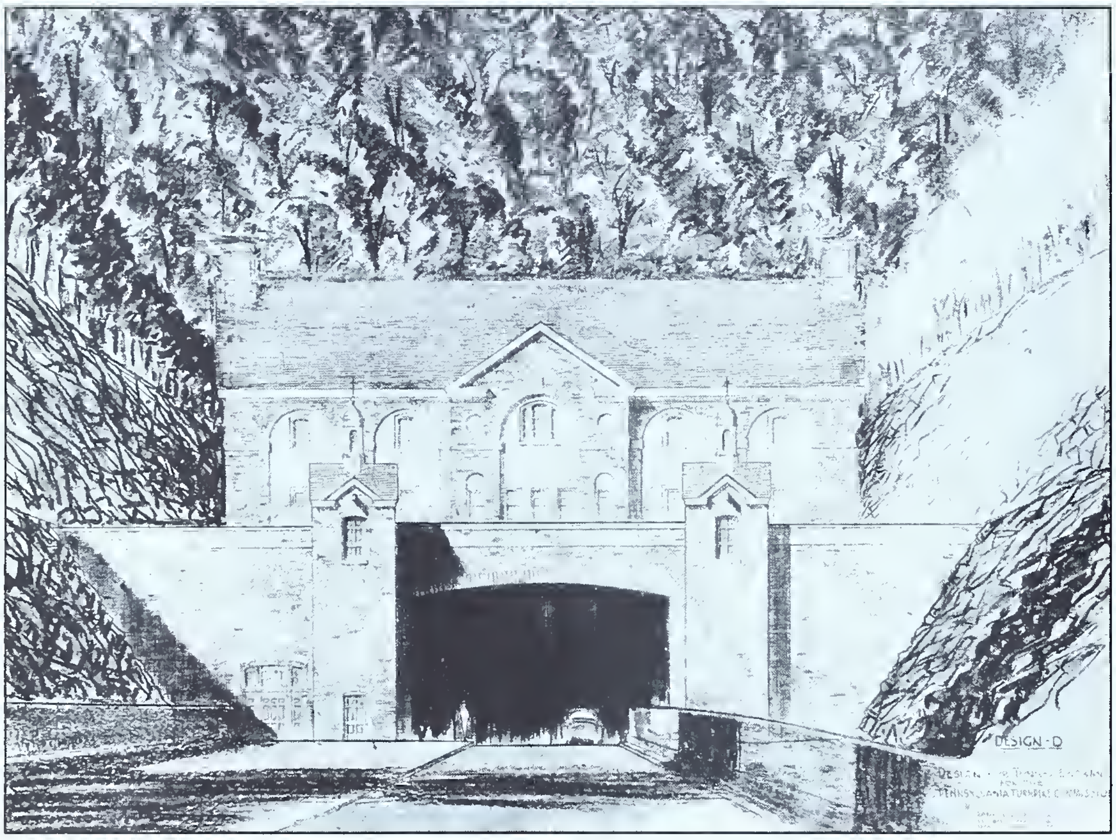
The largest bridge was a concrete viaduct just east of the New Stanton interchange, and two others — the Dunnings



Single-span concrete bridges such as this one at Donegal carried local roads over the Turnpike. PTC

Creek bridge near Bedford and the Fort Littleton interchange overpass — won design awards. Also, the channel of the Juniata River was altered as part of the construction.

As the spring of 1940 turned to summer, pieces of the overall design, one by one, began to fall into place. Soon America's first superhighway would be complete, twin ribbons of concrete that sliced the accumulated vertical climb over the Alleghenies from 13,000 feet, via U.S. Route 30, to less than 4,000 feet. While finishing work continued and loose ends were tied up, officials made test drives over the new road, trying ever higher speeds, sometimes at rates of 100 mph or more. Local motorists sneaked onto the road for an unofficial preview, a practice that was only partially discouraged.



An artist's rendering of a stately proposal for the architectural treatment of the tunnel portals. In the end, a simpler design was chosen. Pennsylvania State Archives

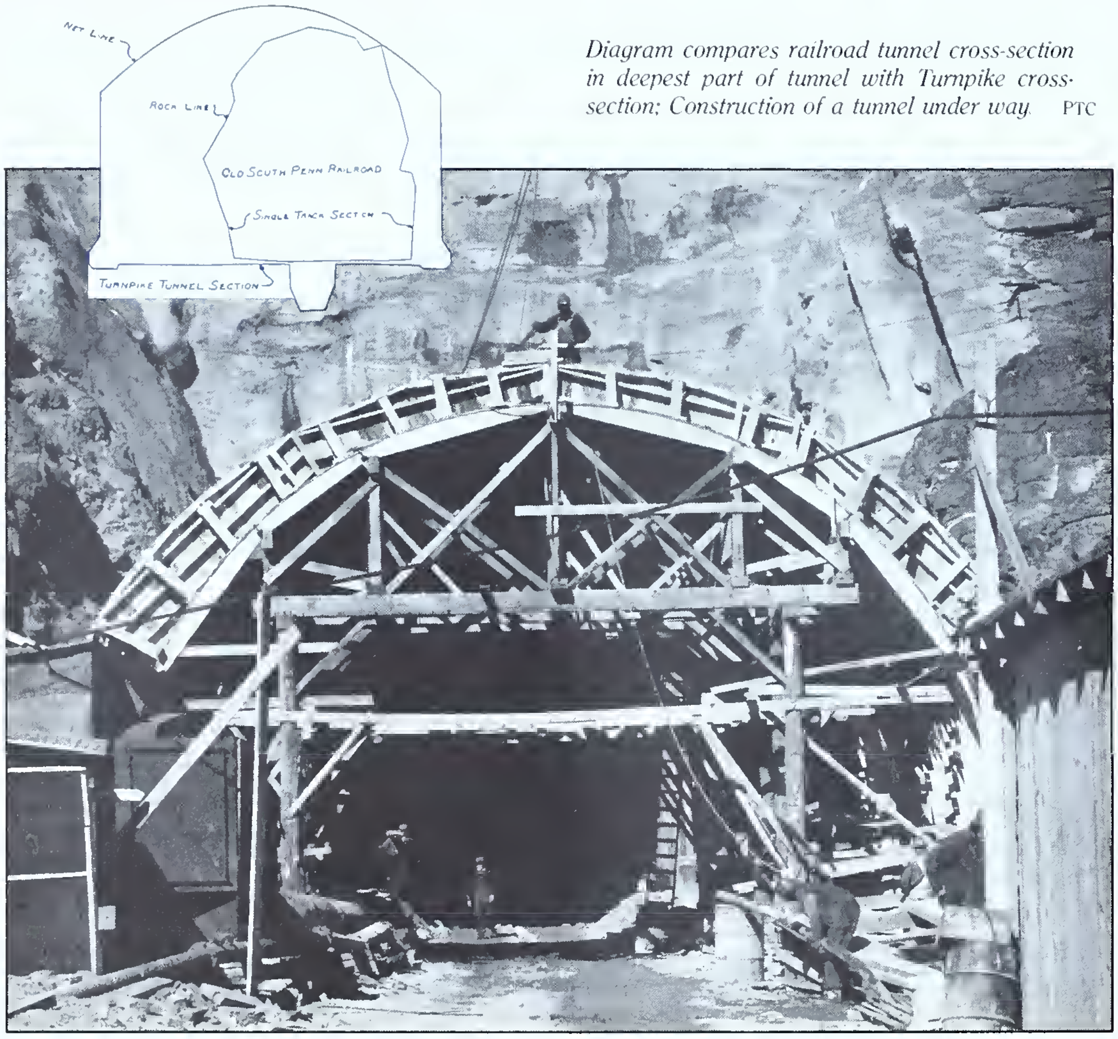


Diagram compares railroad tunnel cross-section in deepest part of tunnel with Turnpike cross-section; Construction of a tunnel under way. PTC

Meanwhile, preparations for law enforcement were under way. At first, the commission wanted to organize its own police force, but state Attorney General Claude T. Reno ruled that the state police, then known as Pennsylvania Motor Police, held jurisdiction. As a result, a corps of 59 troopers was organized, trained at the state police academy at Hershey and specifically assigned to the Turnpike, with the cost of this force to be paid from toll revenue.

The Pennsylvania Motor Truck Association, which had been so instrumental in stirring public and political interest in building the Turnpike, now was voicing deep concern about proposed truck toll rates. PMTA and its national affiliate, the American Trucking Associations, negotiated with Turnpike officials for reduced round-trip fares such as those offered to motorists, and reduced rates for high-volume users. At the same time that its newsletter *Penntrux* was carrying ads from contractors seeking such services as the lease of as many as 45 dump trucks for Turnpike paving jobs, and trucks for hauling Westinghouse Electric transformers from rail sidings to the tunnels, PMTA officials were still pressing for rates to be cut in time for the road's opening, whenever that might be.

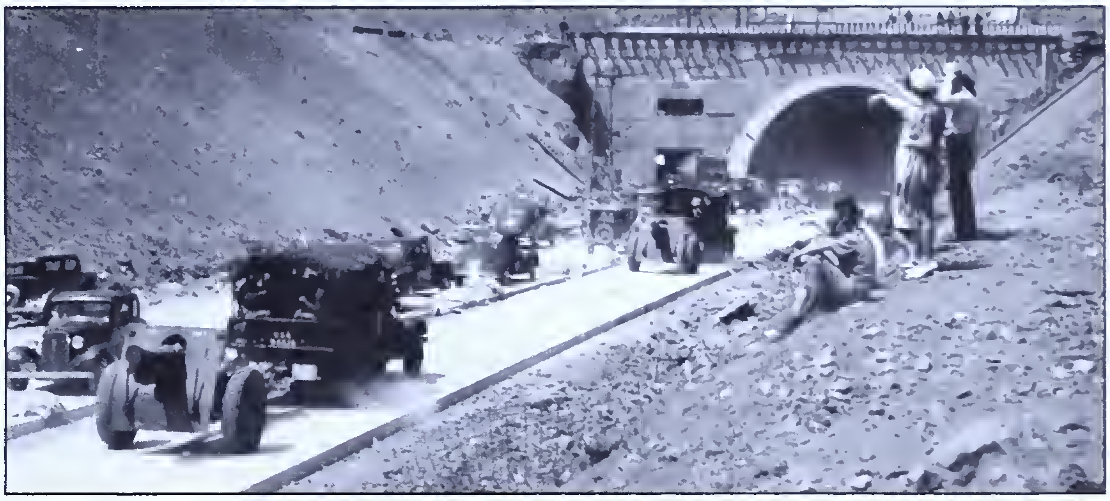
Finally, an Independence Day opening was scheduled, and it was reported that President Franklin D. Roosevelt would snip the ribbon. But the Fourth of July came and went without ceremony, postponement being blamed on weather. Weeks passed. On August 6, the National Guard's 108th Field Artillery battalion, on summer maneuvers, made a 135-mile trip from Indiantown Gap military reservation near Harrisburg to Bedford, using 85 miles of the still-incomplete Turnpike. The movement, intended to prevent the "capture" of a theoretically besieged Bedford, took eight hours and 15 minutes, partly because of equipment breakdowns and partly because of a mountainous eight-mile detour that was necessary because work was still under way at the Blue and Kittatinny mountain tunnels.

Later that month the commission's chairman, Walter Jones, organized a lavish two-day preview motorcade for 175 guests, including U.S. congressmen and senators from as far away as California. The tour began with a banquet at The Hotel Hershey near Harrisburg on August 25, and the caravan of cars began rolling westward at 10:30 the next morning. Stopping to inspect toll booths, tunnels, ventilation fans and Clear Ridge Cut, the group averaged 60 mph, but some cars edged up to 80 and 100. The guests, who filled 93 cars, stopped for lunch at 1 p.m. at the stone Midway service plaza east of Bedford, while the Bedford Springs Orchestra entertained. Jones, who was ill, could not attend but addressed the group from Washington by telephone when its members arrived at Pittsburgh's posh Duquesne Club for another banquet.

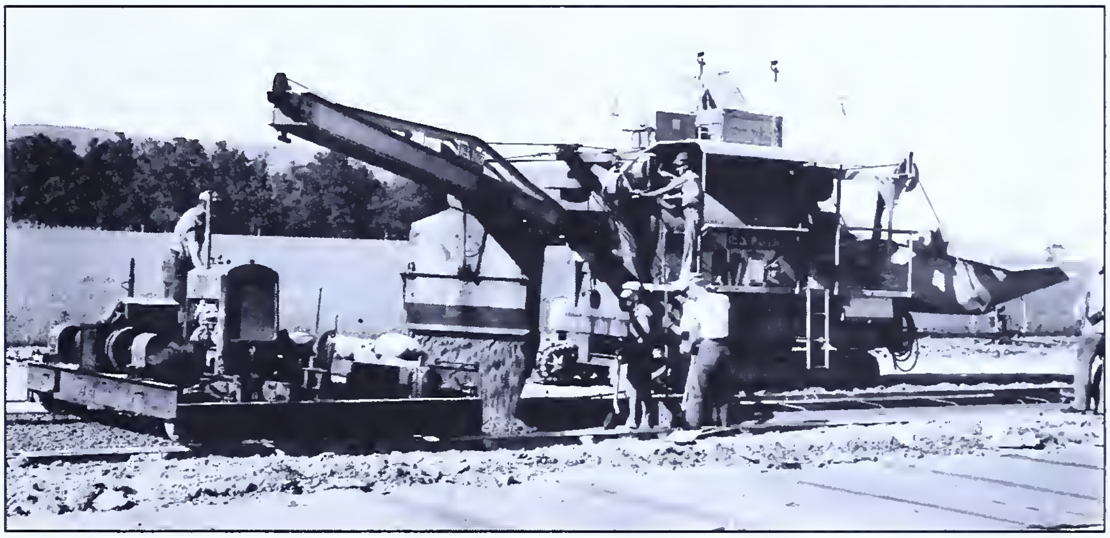
Still, no dedication was in sight, and bondholders began to point out to the commission that every day the superhighway remained closed was another day without revenue to retire its debt. At least a half-dozen dedication dates were discussed and scrapped: Some newspapers guessed that politics was at fault, since 1940 was a presidential election year. Whether or not partisan forces were involved, it was certainly true that over that summer, scores of public figures of both parties were railing against Roosevelt's controversial campaign for an unprecedented third term.

On September 11 the commission approved a fare schedule — approximately 1 cent a mile for passenger autos, or $1.50 for a 160-mile trip from Middlesex to Irwin and $2.25 for a round-trip. Truck rates ran according to weight and vehicle class (based on the toll collector's inspection of tire size), ranging from $3 to $10. PMTA, still dissatisfied with the rates, urged its members to boycott the Turnpike.

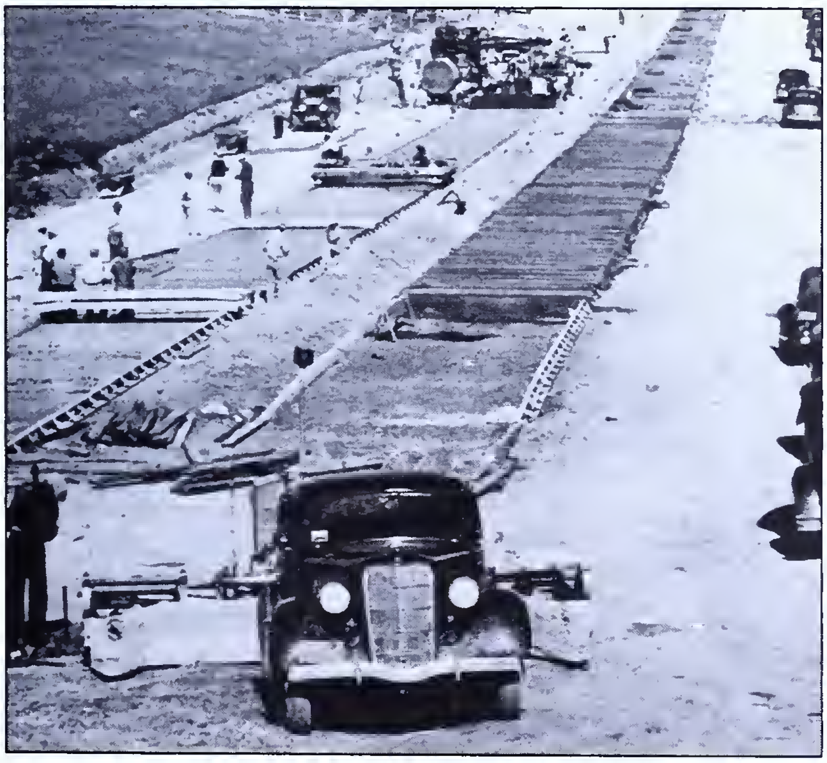
Commissioners met again on Monday, September 30, with Jones attending, and that afternoon he announced that the highway would open within hours, at a minute past midnight Tuesday morning — no ribbon-cutting, no ceremony, no FDR. Suddenly, the era of the "21st century highway" was at hand.



National Guard maneuvers used the Turnpike on August 6, 1940. Local civilians watched the caravan move west in a training exercise to "save" the town of Bedford, which was theoretically "under siege." PTC



Concrete mixed on site is placed into roadway forms by these machines. PTC



Roadway construction along the 12-mile straight stretch west of Carlisle. PTC

Midway restaurant and service plaza near Bedford, under construction. PTC

DESTINATION

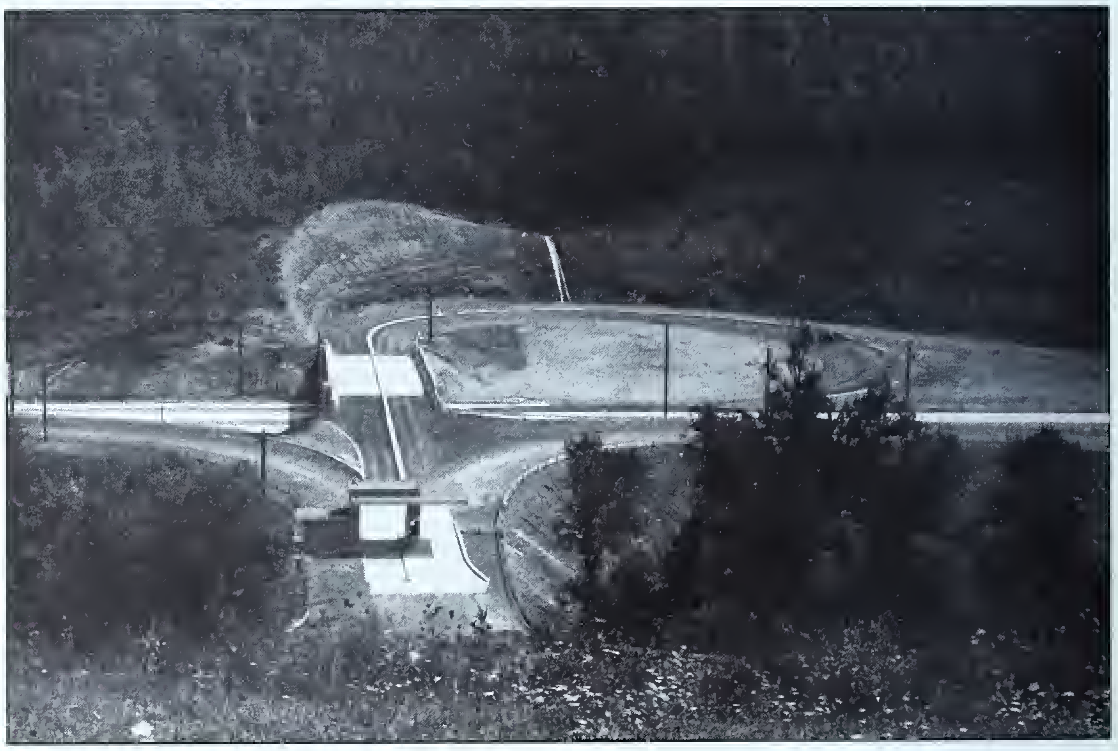
Although Walter Jones gave less than 12 hours' notice of the Turnpike's opening, word spread quickly. Radio stations reported the news throughout the afternoon, and by 6 p.m., eager motorists began to line up at toll booths for the novelty of being first, or among the first, onto the new road.

As soon as they heard about it, travelers and truckers altered their plans, some of them making special trips from as far away as New York and West Virginia to ride the new highway. A couple and their three preschool children drove 150 miles out of their way, and still managed to be fourth in line at the Irwin interchange, the western terminus. Meanwhile, the corps of 50 attendants got ready to do the job for which they had been trained by Lee Rishel, superintendent of fare collection. He later recalled that the order for attendants' jackets and trousers hadn't arrived in time, so at first, the only official-looking clothing they wore was a uniform hat.

Even before the official announcement, it had been widely speculated that the opening was near. A watchman at the Middlesex entrance, the highway's eastern terminus and link to U.S. Route 11, turned away some 600 motorists from 6 a.m. to 2 p.m. on Monday, September 30, the day of the announcement. Newspapers reported that one man had waited at Somerset for four days, that a Philadelphia-bound trucker had waited at Breezewood since Sunday morning, and that a ballet troupe headed from Boston to Oklahoma had been at the New Stanton interchange since early Monday morning.

As the hours passed in the evening's chilly countdown to midnight, some motorists slept to pass the time. A Virginia couple had claimed the first spot in line at Irwin, but got hungry after waiting for five hours and left to get something to eat. When they returned, two cars were in front of them. In the last hour before the opening, motorists at Irwin and New Stanton kept trying to buy their tickets early, but were good-naturedly turned down by the attendants.

Motorists line up at Irwin, waiting for the gates to open at 12:01 a.m., October 1, 1940. PTC



Fort Littleton interchange just before its opening. PTC

With midnight nearing, excitement bubbled and crowds began to collect at each entrance. Dozens, even hundreds, of people gathered at the eastern and western toll booths, Carlisle and Irwin (the highway extended two miles east of the Carlisle interchange to a ramp at Middlesex that intersected U.S. Route 11, the main road to Harrisburg). The nighttime setting only heightened the drama: Shiny blue toll booths, designed with liberal use of glass and awash in floodlights, were "lighted like the entrance to a beautiful exposition," according to the *Pittsburgh Sun-Telegraph*.

Finally, the moment came.

Attendants beckoned the lines of traffic forward, and the first yellow tickets were stamped and handed over. But before mo-

MIDNIGHT

torists could set sail down the new road, local officials congratulated them and reporters interviewed them. At the Irwin interchange, the scene resembled that of a New Year's celebration. Drivers of cars and trucks began tooting their horns and the crowd cheered.

At Carlisle, where more than 100 people and 40 cars and trucks had gathered, the *Harrisburg Telegraph* recorded this scene: "At midnight, two black cats ambled across the gleaming cement. A minute later, a ticket-seller dropped his arm in the gesture of an automobile race-starter, and traffic was under way." The first driver to enter at Carlisle was Homer D. Romberger, a Carlisle feed and tallow dealer who took a 47-mile ride to Fort Littleton. Romberger, who had attended the groundbreaking ceremonies on the Eberly farm 23 months earlier, was handed his toll ticket by attendant R.H. Pastorius of Hummelstown, one of four on duty. Also waiting was the first out-of-state traveler at Carlisle, Bruce Carroll, returning to his home in Ohio. Foretelling the approaching partnership between long-haul freight traffic and the Turnpike, the first commercial vehicle to enter the eastern terminus was on an interstate journey. A light panel truck, it was bound for Steubenville, Ohio. And, symbolic of Pennsylvania's agricultural heritage, the first heavy truck was loaded with potatoes. In all, 20 cars and four trucks entered at Carlisle in the first hour.

At the Irwin end, the first driver to pull his car past the toll booth was 43-year-old Carl A. Boe of McKeesport, owner of a small bus line. He was welcomed by attendant Morris Neiberg of Pittsburgh, one of three on duty. Boe had hardly collected his toll ticket when he was flagged down by two Greensburg men, Frank Lorey and Dick Gangle, who were aiming to be (and were) the Turnpike's first hitchhikers.

A father from the Brushton area of Pittsburgh with his junior-high-school son and daughter, Michael and Mary Costello, made an overnight round-trip on the highway for the fun of it. "We filled the tank with gas and the car full of sandwiches," said their father as they waited to get on the Turnpike at Irwin. "I promised to have the kids back in time for school tomorrow."

As the crowds went home and the night wore on, the first drivers from each end of the highway began to arrive at the other. Soon they were telling excited stories of cruising at 80, even 90 mph; of relaxing without worrying about cross-traffic; of blazing the way over a magic carpet through the Alleghenies.

PTC

The Turnpike's chief engineer—standing, fifth from right—autographed this photo: "Opening Pennsylvania Dream Highway, Oct. 1st, 1940, Sam Marshall, Chief Engineer."

Friday, October 4, 1940
BEDFORD GAZETTE

RAMBLES IN RAYSTOWN

Fog rolled in thickly at the entrance to Bedford's turnpike interchange, half obscuring the brilliantly lighted approaches. In the half dozen cars lined up close to the toll gate, a score of persons waited restlessly. A radio was playing loudly in one car.

"One of those fellows has been here since 6:30 this evening," confided the trim attendant in the doorway of the tollhouse. "The others, mostly since around 9 to 10 o'clock."

An attendant was sorting through tickets at the booth, making doubly certain that everything was ready. The clock ticked briskly on toward midnight.

Several Turnpike engineers stood on the narrow platform by the toll house, stamping their feet briskly now and then as the chilly night air blew about them. Now and then they peered out toward the highway, suddenly remote and large and strange. It was as if these weeks of familiarity with it had suddenly been a long time ago. In a few minutes the turnpike would cease to be a "construction job," and become a highway.

It loomed in the background, large and impersonal, a rather cosmopolitan masterpiece set down in this quiet countryside.

As the hands of the clock drew closer to 12, activity increased. A white patrol car rolled out of the darkness. The motor police swung their cars around, ready to head east and west on their first official patrols.

In this lonely, chilly darkness, with no fanfare, the transition came abruptly. There was no fanfare. Only a few observers felt that something momentous was happening with disarming simplicity.

The hands of the clock swung slightly past midnight; the attendant waved his hand jerkily; the little waiting procession began moving slowly toward the tollgate.

Self-consciously, the first customer received his entrance ticket and his car rolled softly down the incline and into the curving interchange. One by one, the others crept past, vanished into the fog.

Only a minute or so elapsed before the first car to leave the road rolled briskly up to the gate. The attendants were all business now. The car was from the midway station. The driver signed for it, chatted a minute, and drove on. Each car must be accounted for with a signed card or paid fare, and these are checked against the record of cars which pass the gate. This record is automatically made.

Lewis Quint of Claysburg drove up, a few minutes later, with the first truck to enter the Bedford gate. He was going to Philadelphia with a load of scrap metal. He and two companions walked up to the gate to see if the road was open, then drove in. Their small truck rumbled into the darkness, all of them pleased at their distinction.

We stood by the tollgate for a few minutes, waiting for a paying customer to leave. None appeared. Now and then, in the distance we could hear a roaring motor and see the flashing lights of a car passing on the turnpike.

It was cold and we left. The fog had thickened, and it seemed very dark indeed as we left the bright entrance. We had seen the turnpike open. The old book was closed, the new chapter opened.

Spectators and well-wishers exhibit a gleeful mood upon the opening of the Irwin interchange. PTC

The most distinctive feature of the highway was that there was no speed limit. Back in July, a test car had hit a speed of 102 mph, and Governor Arthur James had agreed then that the normal statewide limit of 50 mph would not apply. But a week before the road opened, a legal opinion from his attorney general changed his mind, and he announced that the 50 mph law would be imposed. This ruling, however, was flatly ignored by both the motoring public and the Turnpike detail of troopers. Entering motorists who asked toll-booth attendants the speed limit were told simply, "Drive carefully."

Quickly, it became clear that the only limitations were those of nerve and common sense. An Ohio trucker who expected to get a ticket for speeding told this tale:

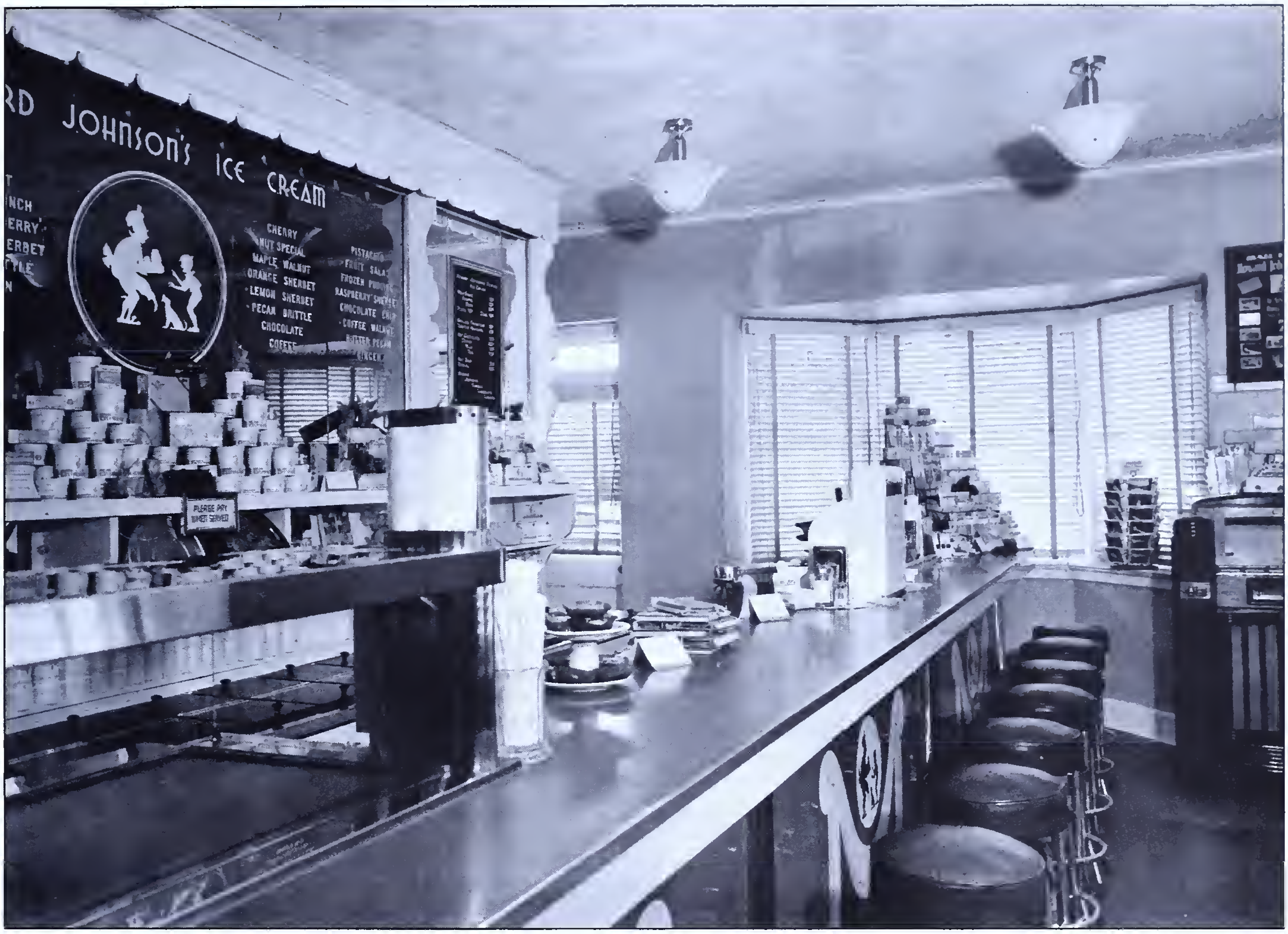
"I was going down one of the grades at 70 to 80 miles an hour. I looked in the mirror and saw a white car following me. I didn't know whether I was going to get arrested, so I pulled off the road as though to take a rest.

"The white car pulled off, too. An officer got out and asked me, 'How do you like the road?' I said, 'It's very nice — I guess I get a ticket.' The cop told me, 'No, we aren't interested in the speed limit. As long as you stay on your own side and watch yourself, we won't bother you.'"

One motorist arriving at Carlisle in the early morning covered the entire 160-mile stretch in 2 hours 10 minutes, averaging 74 mph. Those who took a little longer — many reported driving end-to-end in between 2 hours 30 minutes and 2 hours 40 minutes — still shattered the 5½- to six-hour trip time then considered normal for a Harrisburg-Pittsburgh journey via the two-lane Lincoln (U.S. Route 30) or William Penn (U.S. Route 22) highways. As it turned out, the Turnpike was not only faster and easier to drive than either of those roads, but it also was shorter — by about five miles compared to Route 30, and by 18 miles compared to Route 22. One driver covered the 78½ miles from Bedford to Carlisle in just 52 minutes, for an average of 91 mph.

Even at moderate speeds, the time savings were striking, because of the route's straight and relatively level alignment. One trucker said he was able to cover in four hours what ordinarily would have taken 10, saving six hours of time and 20 gallons of fuel.

The only complaint was that the highway didn't go on to Pittsburgh. "It just ends where it should be starting," said Merle Foust, who was traveling westbound from Somerset to Irwin.



Interior of the Carlisle (now Plainfield) restaurant as it appeared about the time of the Turnpike's opening. PTC

Some travelers got so wrapped up in their excitement that they forgot to keep an eye on the fuel gauge. At the Carlisle service plaza (now named Plainfield), an attendant reported that four cars had run out of gas, and he had helped the stranded driver of one of them push it to the pumps.

A New York motorist who didn't want to use the Turnpike threatened to sue the commission over a dime fare he was charged when he mistakenly got on the highway. Entering at the Middlesex ramp, where there was no toll booth, he tried to make a U-turn at the Carlisle toll booth, two miles later. Although he protested that the road wasn't adequately marked, a trooper ordered him to pay the dime toll and leave via the Carlisle exit ramp.

Observers noted that about half the vehicles using the road on the first day were from out of state, and of those, about half of the nation's states were represented.

As the highway's first day drew to a close, 1,550 vehicles had entered at Irwin, and more than 1,900 had entered at Carlisle. The police log at the Bedford headquarters of the Turnpike Division of the Pennsylvania Motor Police recorded: "No accidents, no arrests and no unpleasantness."

◆ ◆ ◆

Within a few days of the opening, Pennsylvania Greyhound Lines announced that it would inaugurate long-haul intercity buses over the Turnpike. In the early 1930s, Greyhound buses had taken nearly 9 hours to make the Harrisburg-Pittsburgh run via the William Penn Highway, but now the company was posting schedules for twice-daily service taking just 5¼ hours, which included a rest stop at Bedford. According to the Motor Bus Society, Pennsylvania Greyhound Lines became Turnpike commercial account No. 1. Beginning in the 1930s, federal and state regulatory control was imposed on many highway common carriers as it had been earlier on railroads, and the state's Public Utility Commission ruled on requests to add, change or drop routes or service territories within the state (carriers of some commodities, such as agricultural products, were exempt). The PUC granted Greyhound intrastate rights to use the Turnpike, with stops at Bedford and Somerset, provided that it didn't affect Greyhound's service on its existing routes. In addition, the PUC granted rights to Somerset Bus Co. to link Pittsburgh, Irwin and Somerset, with stops at Donegal and New Stanton.

The Pennsylvania Motor Truck Association continued to protest the truck tolls, which it said many operators could not afford, and kept negotiating with the Turnpike Commission for a reduction. As opening day came and went, PMTA — the earliest of the Turnpike's backers — still urged its members to boycott the new highway. But the advantages in delivery time, fuel saved and driver comfort proved to be overwhelming, and in the weeks that followed, interstate trucks and intrastate trucks without regulatory limitations quickly were attracted to the Turnpike by the thousands.

A PEACH

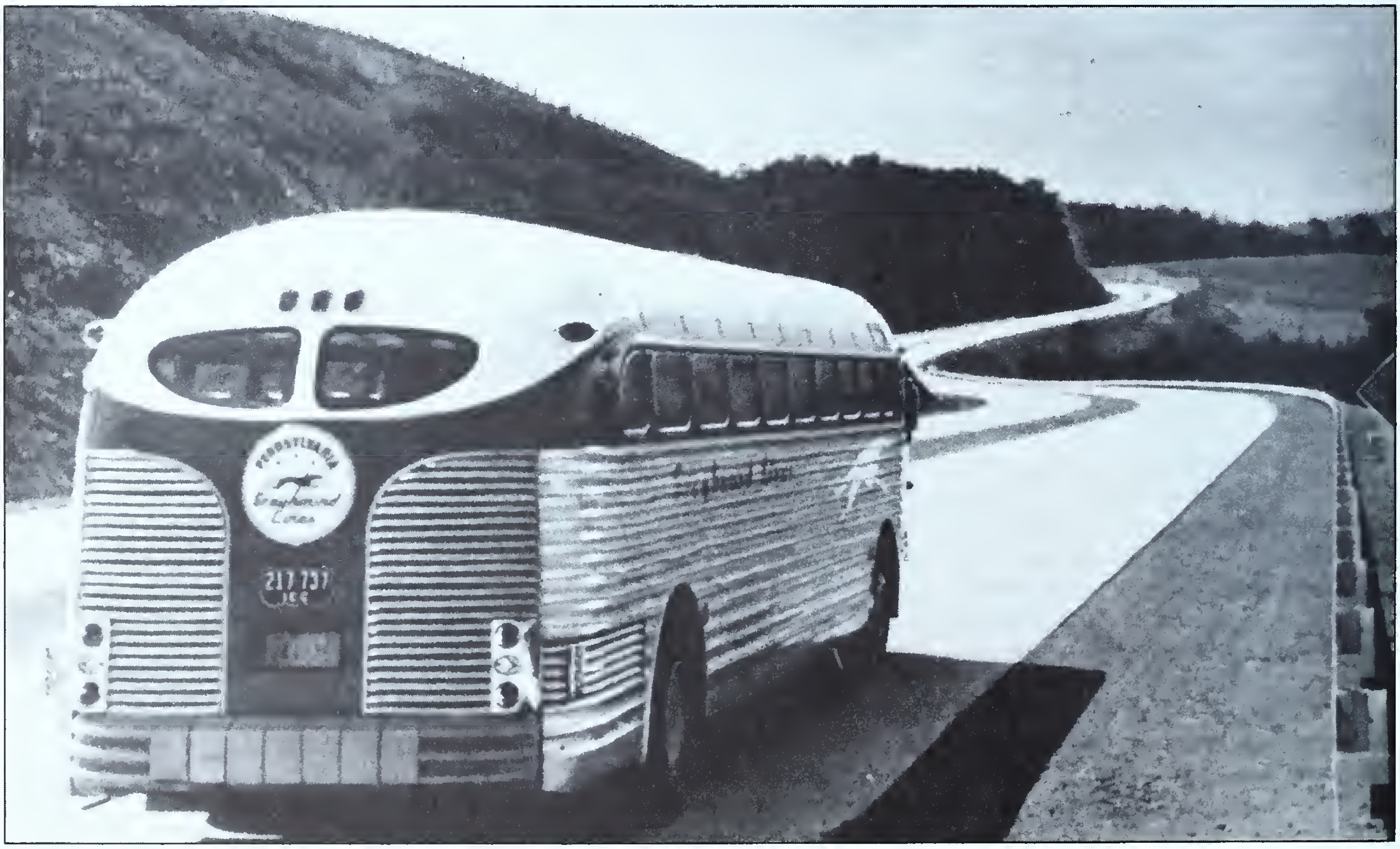
The golden colors of fall foliage in the southern Pennsylvania mountains were at their peak on Sunday, October 6, the first opportunity many people would have to take a trial spin on the new road. It was a gorgeous day, but nothing could have prepared the Turnpike Commission for what was about to happen. Traffic in the morning was fairly normal, but by afternoon thousands of after-church and after-Sunday-dinner motorists jammed the highway, throwing toll booths into pandemonium. Attendants at three of the interchanges ran out of passenger-car tickets and resorted to handing out light truck tickets or hand-written notes.

The biggest problem, however, lay not in getting on the Turnpike, but in getting off. Traffic backed up for miles waiting to leave the highway at all interchanges, as the need for collecting tickets and fares and giving change took more time than just handing a ticket to someone entering the system. Attendants were so busy that they couldn't even take time for lunch, and some were observed handing out toll tickets with one hand while eating a sandwich with the other. Turnpike Commission employees who intended to go out for a Sunday drive with their families found themselves drafted into directing traffic at the Carlisle interchange. The snarl was so severe that all 59 turnpike troopers were pressed into service trying to ease the pinch.

A Johnstown motorist said he waited four hours and 50 minutes to leave the Turnpike at Somerset. A backup at Bedford stretched for six miles; another at Carlisle extended for three miles. Congestion also appeared at tunnel entrances, where the highway's four lanes narrowed to two. One gas station reported a half-mile line for fuel, and, counting all stations, Standard Oil reportedly sold 50,000 gallons of gas.

The *Bedford Gazette* observed: "The fact that a majority of the motorists did not desire to make the entire (160-mile) trip over the highway was believed to have been responsible for the traffic jams. Thousands of sightseers entered the Turnpike at Irwin, with the expectation of leaving in Somerset and probably returning over the new road. However, as hundreds of cars lined up at the Somerset interchange, many decided to continue and leave at Bedford. Upon arriving there, many encountered even worse traffic conditions than at Somerset." Carlisle Pike (U.S. Route 11), the road connecting Harrisburg with Carlisle, was "black with automobiles traveling to and from the turnpike," according to the Harrisburg *Evening News*. City police worked double shifts trying to handle traffic in downtown Harrisburg that had spilled over from the Turnpike.

The jams on the toll road were finally broken between 10:30 p.m. and midnight. Early estimates of traffic volume ranged from



Greyhound publicity photo shows shiny new fluted-side bus posed at S-curve just east of Fort Littleton interchange. Motor Bus Society

OF A ROAD

10,000 to 12,000 vehicles, but when the tickets were finally counted, the figure was an astounding 27,000. Just as remarkably, only a single, minor accident was reported.

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Two days later, things had scarcely gotten back to normal when the Turnpike welcomed its first celebrity in the form of Governor James, the man who'd tried to impose a 50-mph speed limit. Returning from visiting an ill friend at the Mayo Clinic in Minnesota, James flew to Chicago and took a Pennsylvania Railroad train from there to Pittsburgh, from which point he drove to Harrisburg. His toll was waived: "They told me I'm the only man privileged to sign my name," he said. From downtown Pittsburgh to the Capitol, his trip took four hours (at 50 mph, of course). James declared the Turnpike to be "a peach of a road." Hinting at the reaction that later would be termed "highway hypnosis," James said his journey was "the most somnolent trip I've ever taken" and recommended that "(t)hey ought to give everybody a cup of coffee before they go onto the Turnpike to keep them awake."

◆ ◆ ◆

While the governor was trying out the new highway in midweek, the commission was bracing for a second wave of Sunday sightseers. Workers added temporary toll booths and asphalt lanes at all of the interchanges except the one at Irwin, and more tickets were hastily printed. Commission counsel John D. Faller asked for understanding, pointing out that "the work and problems of the Commission are new and must be coped with for the first time."

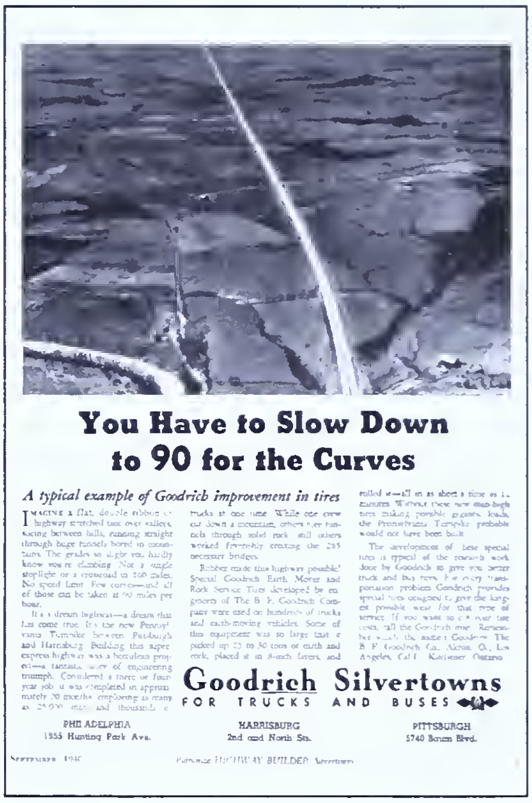
The preparations were not in vain. On the Turnpike's second Sunday, it handled 30,000 vehicles, but without the hours-long traffic jams of the week before. There was still some congestion, mainly in getting from the toll booths onto the state highways, and in the towns surrounding the interchanges. But these towns came out ahead: Motels, tourist homes and restaurants were crowded, and a few ran out of food and closed early. Before the opening, they had fretted that the Turnpike might siphon off all the business from Route 30.

On that second Sunday, some motorists were still confused by the Turnpike concept. One drove the wrong way on an exit ramp at Middlesex and wound up in a minor scrape; another pulled up to the toll booth at Carlisle and asked how to get on the Turnpike.

Above: Motorists who had car trouble could summon help from authorized off-Turnpike garages. PTC

Right: Ads like this promoted the unique straight-and-level, limited-access design of the Turnpike. Highway Builder magazine

Below: Within days of the opening, bus advertisements similar to this one began to appear in the Harrisburg newspapers. State Library of Pennsylvania



You Have to Slow Down to 90 for the Curves

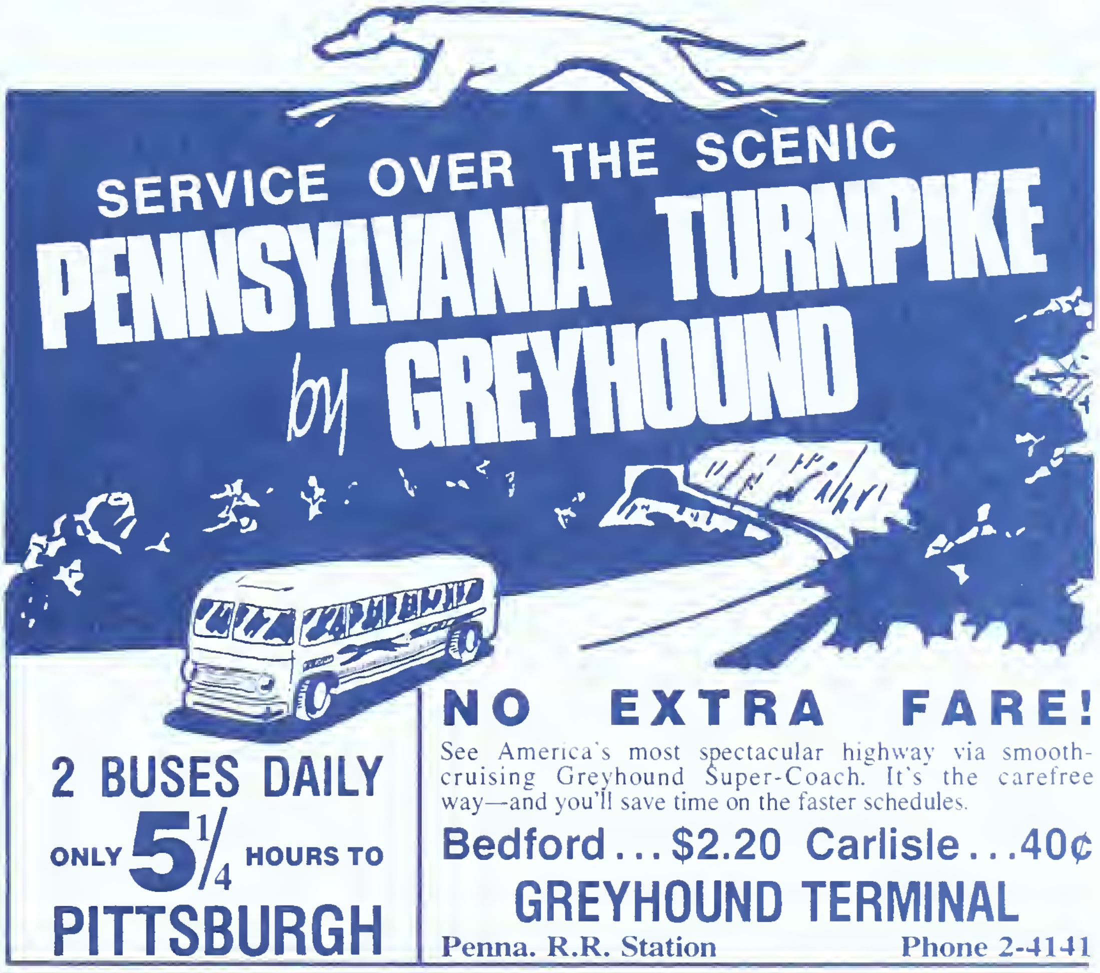
A typical example of Goodrich improvement in tires

Goodrich Silvertowns
FOR TRUCKS AND BUSES

PHILADELPHIA
1955 Hunting Park Ave.

HARRISBURG
2nd and North Sts.

PITTSBURGH
5740 Baum Blvd.



SERVICE OVER THE SCENIC
PENNSYLVANIA TURNPIKE
by GREYHOUND

2 BUSES DAILY
ONLY 5¼ HOURS TO
PITTSBURGH

NO EXTRA FARE!

See America's most spectacular highway via smooth-cruising Greyhound Super-Coach. It's the carefree way—and you'll save time on the faster schedules.

Bedford . . . $2.20 Carlisle . . . 40¢

GREYHOUND TERMINAL

Penna. R.R. Station **Phone 2-4141**

CONFOUNDING

With nearly two weeks of experience under their belts, Turnpike officials released figures showing that in its first four days of operation, October 1-4, the road carried 24,000 vehicles, or 6,000 per day. That was nearly double the forecast of 3,500 a day (1.3 million a year) made by the Turnpike's own consulting traffic planners. When added to the "unpredicted and unpredictable numbers of vehicles which swarmed over the road" for weekend sightseeing, according to an automobile club magazine, the count rose to 150,000 for the first 15 days of use, or 10,000 a day. (These travelers, the magazine noted, had paid $140,000 in tolls.) While many of these represented one-time curiosity trips unlikely to mirror any trend in actual day-in, day-out traffic, the numbers were still breathtaking.

Even more significant, they completely defied the pessimistic predictions — 715 vehicles a day — of the U.S. Bureau of Public Roads, predecessor of today's Federal Highway Administration. The Bureau's position was not only strongly anti-toll-road, but it was also against intercity limited-access superhighways, either toll or free. In 1937, about the time he began to think about helping to finance Pennsylvania's toll-road project, President Franklin Roosevelt had asked the Bureau's director, Thomas H. MacDonald, to conduct a feasibility study on a proposal for six national toll superhighways — three east-west and three north-south. But MacDonald believed that toll roads would never attract enough business to repay their construction costs. He considered improved urban highways to be more important, and although he agreed that an inter-regional network of national roads was useful, he thought a two-lane design would be adequate for much of the distance. This was at a time when only 11,000 miles of four-lane highway existed among the nation's 3 million miles of road. The study's findings were summarized in a report to Congress titled *Toll Roads and Free Roads,* issued on April 27, 1939. In his 1987 book *Building the American Highway System,* author Bruce E. Seely notes that the Bureau's report "attacked a national system of toll superhighways as wasteful, presenting traffic estimates that showed that only 3,346 of the proposed 14,336 miles required more than two lanes. Only 547 miles, it predicted, would return more than 70 percent of the receipts needed to retire the construction bonds, and only the 172 miles from Philadelphia to New Haven (Conn.) might break even. BPR analysts assumed that public resistance to tolls would deter traffic and that limited access would prevent superhighways from serving the local traffic that formed the majority of all trips, even if motorists wished to use them. The BPR simply believed toll roads were unprofitable."

The study broke the six proposed superhighways into 75 segments and estimated that the portion represented by the Turnpike would rank no higher than 19th in traffic volume. More than half of the automobiles then in existence were owned by families having an income of no more than $1,500 a year, *Toll Roads and Free Roads* noted. "The cost of the gasoline consumed on a trip may amount to a little more than a cent a mile,"

The distinctive hexagonal toll booths were a hallmark of the original 160-mile Turnpike. PTC

The 600-foot-long curved viaduct, just east of the New Stanton interchange, was the longest bridge on the Turnpike. PTC

THE CRITICS

it said. "To the motorcar owner with an income of less than $1,500 a year, a toll of one cent per mile is likely to appear as a 100 percent increase in his cost of operation. He would view this as an additional cost that he is not likely to pay."

But, citing the volume of traffic that confounded critics when the Turnpike opened 18 months after the report was issued, author Phil Patton observed in his 1986 book *Open Road*: "The BPR had no notion that the construction of new superhighways, like the introduction of such inventions as the telephone and the auto itself, might create its own demand."

In fact, one spin-off effect of the Turnpike's profitability was to alter the course of national highway policymaking. MacDonald's thinking was rooted in the transportation needs of America in the early 1930s, before the coming of two factors in long-distance motoring that would grow even more important in the postwar era: The rise of the trucking industry, and recreational travel. As things turned out, MacDonald had been so wrong about toll roads that in the end it cost his agency its long-held clout in setting the federal highway agenda, and it marked a historic turning point. From then on, policy decisions were made increasingly by officials sensitive to the electorate, rather than chiefly by engineers and technicians. With Pennsylvania's fresh success, Roosevelt and Congress seized on the concept of interregional highways contained in *Toll Roads and Free Roads*, but beefed it up. Eventually, it became the blueprint for what is today the 43,000-mile Interstate highway system.

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Bill Yocum was a 19-year-old trucker who hauled new Chrysler automobiles from Detroit and the Great Lakes port of Buffalo to the Washington, D.C., area, when the Turnpike was opened. The company he drove for, K.U.K. Auto Transit, was based in Williamsport, Pa. It avoided operating over the shorter but mountainous route (U.S. Route 30, the Lincoln Highway), preferring instead to go scores of miles out of the way — U.S. Route 6 across the northern tier of Pennsylvania counties, then down the Susquehanna Valley to Harrisburg. U.S. Route 22, the William Penn Highway, was not considered a statewide trucking corridor because of a height restriction imposed by a low-clearance underpass in Huntingdon. When the Turnpike opened, K.U.K. started using it, and Yocum drove on it that first winter.

"I can remember sitting in one of the Turnpike restaurants with other drivers on a snowy night, and our conversation was about the fact that we wouldn't be out driving at all if it weren't for the Turnpike," he said. "These were winter nights when ordinarily truckers would simply have to tie up." Yocum, who later became president of the Pennsylvania Motor Truck Association, said the new road cut a full day off a round-trip journey between Detroit and Washington.

Tunnel illumination was designed to ease a motorist's visual transition from outdoor light conditions to artificial light.

PTC

He also remembers that trucks carrying flammable or explosive products were allowed to travel through the Turnpike tunnels, but only after all traffic in both directions had been stopped. Whether because of traffic disruption or because of the hazard, that practice ended less than a year after the highway opened, and flammable shipments have been prohibited in the tunnels ever since.

The public was just as impressed as the truckers were. On October 31, 1940, a motorist wrote on a Turnpike postcard mailed from Camp Hill to Pittsburgh: "We came through the tunnels. The lights make them like a fairy land."

◆ ◆ ◆

By the end of 1940, the Turnpike had carried 514,231 cars, 48,170 trucks and 2,409 buses, and collected total revenues of $562,464. But that did not mean that all of those drivers had adjusted to the kind of motoring skills called for by high-speed, quick-reaction situations. Nor did it compensate for the fact that many automobiles of that era were never built to go 80 mph, or even 60 mph. *Fortune* magazine noted: "The Turnpike is the first American highway that is better than the American car. As such, it will represent the maximum in road construction for many years. It is proof against every road hazard except a fool and his car." *Engineering News-Record* reported: "Excessive speed on the Pennsylvania Turnpike has been checked more by the experience . . . that cars and tires do not stand up under the high sustained speed . . . than by any other means." Tire blowouts and overheated engines were common. Motorists had heeded commission Chairman Walter Jones' plea to aim for a safety record in the highway's first days, but barely had three weeks passed before icy conditions contributed to the road's first fatality, a 66-year-old Bethlehem, Pa., man who died after his car crashed into a bridge near Donegal.

As 1941 opened, a few loose ends began to resolve themselves. On January 25, the Turnpike Commission and the Pennsylvania Motor Truck Association reached agreement on a plan of reduced tolls. Carriers that were volume users could get a discount of as high as 20 percent, and monthly fleet billings also were made available.

On April 15, Governor James signed Act 10, which set a 70 mph passenger-car limit, and truck speed limits, depending on size and weight, that varied from 50 to 65 mph. The only restriction was a 35 mph limit in the tunnels.

Winter maintenance in early days was far less mechanized than it is today. PTC

Cars pass through Clear Ridge Cut east of Everett, the deepest American highway excavation (153 feet) ever attempted at that time. PTC

But by this time speed was no longer the newest issue under debate. With the demand for Turnpike service well established, officials, editorial writers and the public began to look toward spreading the benefits of superhighway travel east and west — and north and south. Even before the Turnpike was opened, commission Chairman Jones announced his own proposal for an 1,800-mile, $860 million system of toll roads running from Richmond, Va., to Boston; Philadelphia (incorporating the Pennsylvania Turnpike) to St. Louis; Pittsburgh to Chicago and Indianapolis to Chicago — roughly the system map of William Vanderbilt's old rival, the Pennsylvania Railroad. With vision wiser than anyone knew, Jones wrote: "However advantageous, it is hardly possible that any of the states will be able to contribute much to the development of a national system of super-highways . . . our task is a national one and the understanding of this need must be brought to the attention of Congress in a convincing manner." Sixteen years later, the national Interstate highway act would recognize this very principle by establishing a 90-percent-federal, 10-percent-state cost-sharing formula.

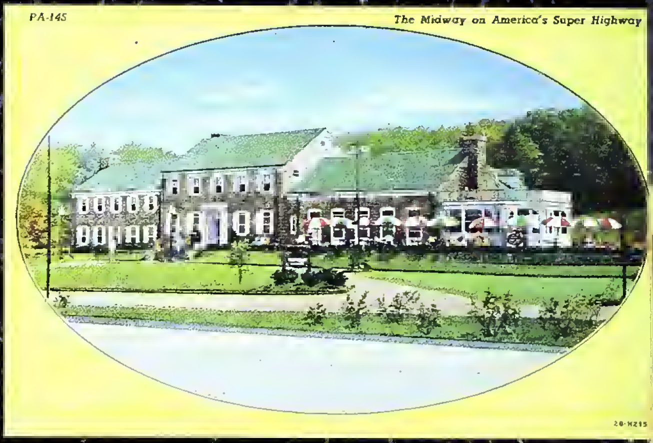
But expansion within Pennsylvania was the first priority. Four months before the Turnpike opened, Governor James had signed Act 11, which authorized the commission to reach eastward to Philadelphia. In his message to the Legislature on January 7, 1941, James asked lawmakers to call on federal authorities to "extend the Skyline Drive from Front Royal, Va., along the crest of the Pennsylvania mountains, to the Delaware Water Gap . . . and second, that the federal government give consideration to a new superhighway for Pennsylvania to extend from our ocean port at Philadelphia to our lake port at Erie." Then on June 11, 1941, with the Turnpike open for business less than a year, James signed Act 54, the Western Extension act, which envisioned pouring cement to the Ohio border.

This optimism was based on nothing less than performance. In its first 12 months, the Turnpike carried 2.4 million vehicles, nearly twice the original projection of 1.3 million. But in its 14th month, the United States was drawn into World War II. For highway travel as for all other facets of American life, conditions would be quite different for some time to come.

THE PENNSYLVANIA

Turnpike

COLOR PORTFOLIO

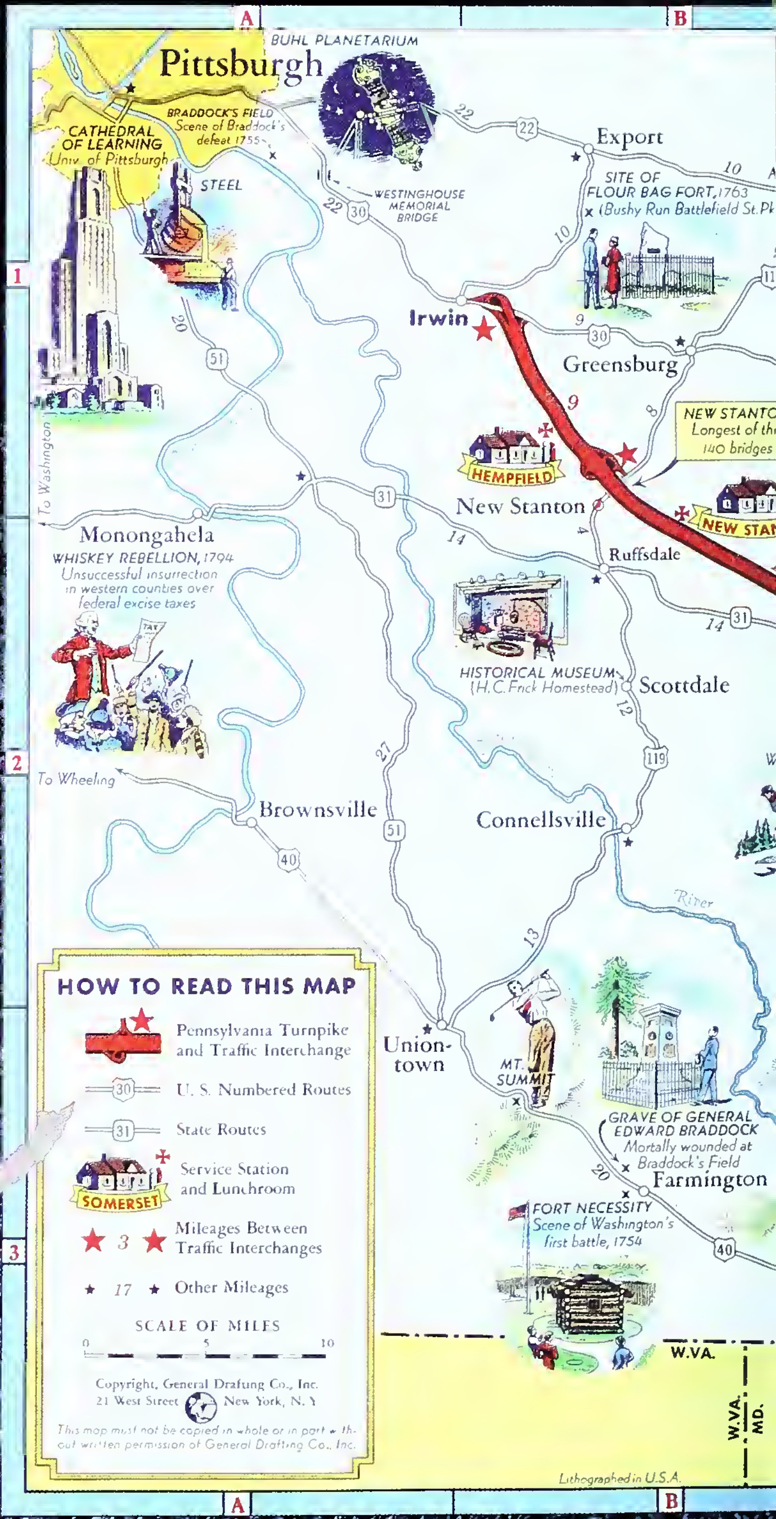


Aerial View of New Stanton Viaduct and Interchanges, Pennsylvania Turnpike

Airplane View of Interchange at Junction of Pennsylvania Turnpike and Lincoln Highway, Irwin, Pa.

THE PENNSYLVANIA Turnpike

This map was published in 1941 to illustrate the Original T


Pittsburgh
BUHL PLANETARIUM
CATHEDRAL OF LEARNING
Univ. of Pittsburgh
BRADDOCK'S FIELD
Scene of Braddock's defeat 1755
STEEL
WESTINGHOUSE MEMORIAL BRIDGE
Export
SITE OF FLOUR BAG FORT, 1763
(Bushy Run Battlefield St. P
Irwin
Greensburg
HEMPFIELD
New Stanton
NEW STANTO
Longest of th
140 bridges
NEW STAN
Ruffsdale
Monongahela
WHISKEY REBELLION, 1794
Unsuccessful insurrection in western counties over federal excise taxes
HISTORICAL MUSEUM
(H. C. Frick Homestead)
Scottdale
To Washington
To Wheeling
Brownsville
Connellsville
River
Union-town
MT. SUMMIT
GRAVE OF GENERAL EDWARD BRADDOCK
Mortally wounded at Braddock's Field
Farmington
FORT NECESSITY
Scene of Washington's first battle, 1754
W.VA.
W.VA.
MD.
Lithographed in U.S.A.
A
B
1
2
3
HOW TO READ THIS MAP
Pennsylvania Turnpike and Traffic Interchange
U. S. Numbered Routes
State Routes
SOMERSET
Service Station and Lunchroom
3
Mileages Between Traffic Interchanges
17
Other Mileages
SCALE OF MILES
0
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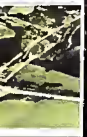
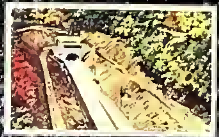
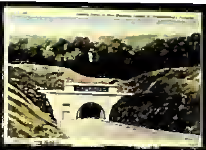
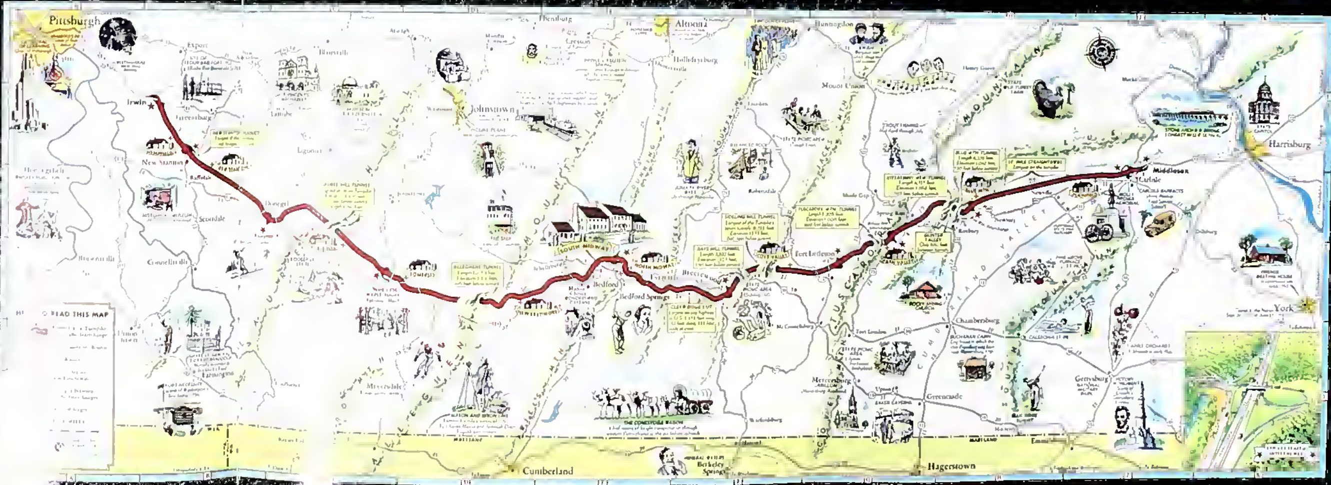


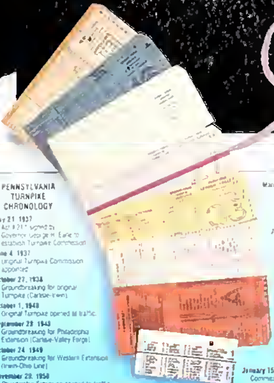




This map was published in 1941 to illustrate the Original Turnpike from Irwin to Middlesex (Carlisle).



THE PENNSYLVANIA *Turnpike*



PENNSYLVANIA TURNPIKE CHRONOLOGY

May 21 1937
Act #211 signed by Governor George H. Earle to establish Turnpike Commission

June 4, 1937
Original Turnpike Commission appointed

October 27, 1938
Groundbreaking for original Turnpike (Carlisle-Irwin)

October 1, 1940
Original Turnpike opened to traffic.

September 28 1948
Groundbreaking for Philadelphia Extension (Carlisle-Valley Forge)

October 24 1949
Groundbreaking for Western Extension (Irwin-Ohio Line)

November 20, 1950
Philadelphia Extension opened to traffic.

December 28 1951
Western Extension opened to traffic.

November 26, 1952
Groundbreaking for Delaware River Extension (Valley Forge-Delaware River)

March 25 1954
Groundbreaking Northeastern Extension (East-West Turnpike junction)

June 22 1954
Groundbreaking for Delaware River Bridge (Delaware Valley Interchange to bridge)

November 17 1954
Delaware River Extension opened to traffic

May 23 1956
Delaware River Bridge interchange and bridge opened to traffic.

January 15, 1957
Commission personnel moved to new Administration Building

November 7, 1957
Northeastern Extension opened to traffic

September 6 1962
Groundbreaking on Laurel Hill Bypass and boring of second Allegheny Tunnel

October 30 1964
Laurel Hill Bypass (3.1 miles) opened eliminating two-lane 4,541-foot-long Laurel Hill Tunnel

March 15 1965
Second Allegheny Tunnel opened, original tunnel closed for refurbishing

December, 1965
Median barrier completed on entire east-west Turnpike

April 1966
Work begins on second tunnels at Blue, Kittatinny and Tuscarora Mountains

August 25 1966
Original Allegheny Tunnel reopened

November 26 1968
Sideling Hill Bypass (13.3 miles) opened eliminating two two-lane tunnels, Ray's Hill (3,532 feet) and Sideling Hill (6,782 feet)

November 26, 1968
Second Blue, Kittatinny and Tuscarora tunnels open

August 14 1980
Median barrier completed on entire Turnpike

December 2, 1981
Completion of three climbing-lane projects (Allegheny, Indian Creek and Jacob's Creek)

May 28 1982
Computerization and renovation of toll collection system begins

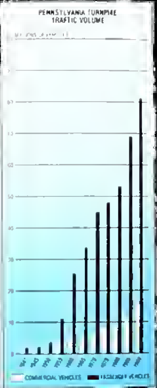
July 22, 1987
Computerized toll collection system goes into service

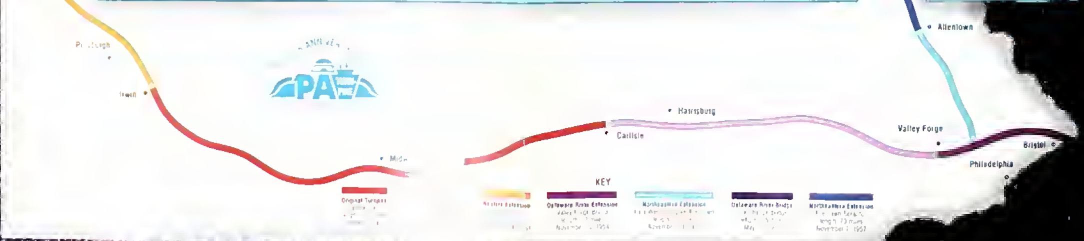
March 10 1989
Six-lane widening project begins (junction of Northeastern Extension to Philadelphia interchange)

November 23 1991
Opening of six-lane section near Philadelphia

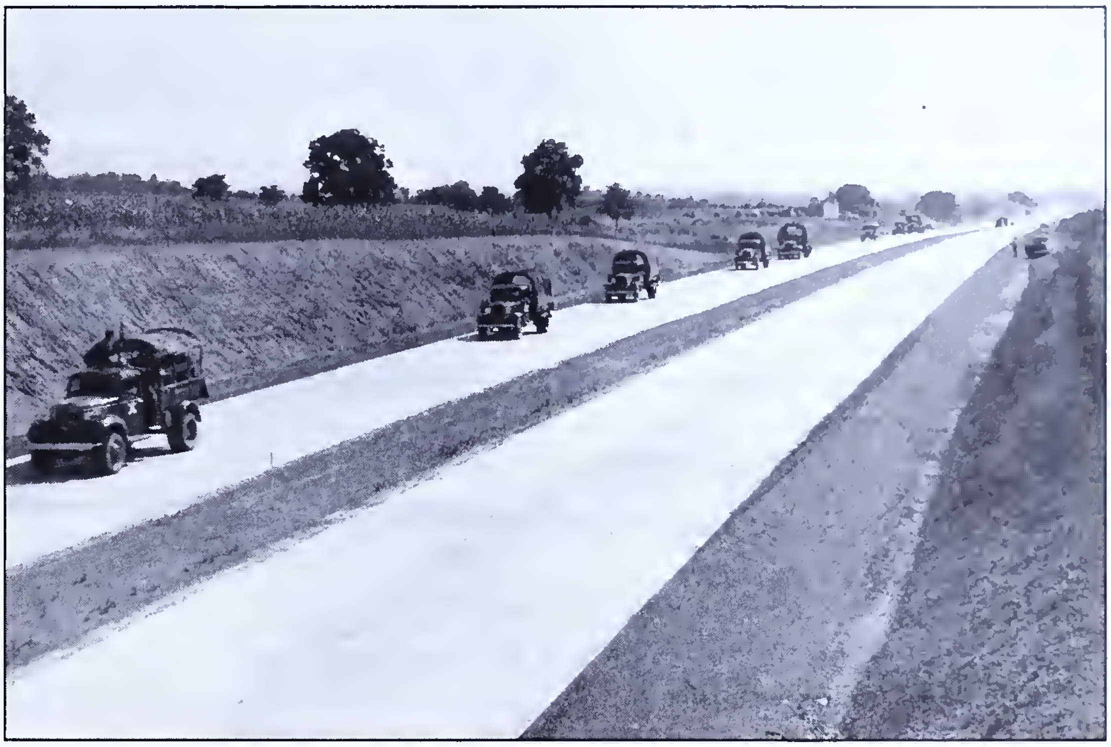
PENNSYLVANIA TURNPIKE BASIC FACTS

Length of highway	
Delaware River to Ohio	360 miles
Northeastern Extension	110 miles
Total	470 miles
Curves	
Maximum	6 degrees
Western Extension	4 degrees
Eastern, Delaware R. and Northeastern Extensions	3 degrees
Grades	
Maximum	3 percent
Tunnels	
Blue Mountain	4,339 feet
Kittatinny	4,727 feet
Tuscarora	5,326 feet
Allegheny	6,070 feet
Lehigh (on NE Ext.)	4,461 feet
Major Bridges	
Delaware River	6,511 feet
Schuylkill River	1,224 feet
Susquehanna River	4,526 feet
Allegheny River	2,180 feet
Beaver River	1,540 feet
Lehigh River (on NE Ext.) South Crossing	1,487 feet
Clarks Summit (on NE Ext.)	1,627 feet





THE TURNPIKE GOES TO WAR



A military convoy moves over the Turnpike. PTC

> Dear Mother:
>
> "We came over the Turnpike to Bedford last nite & stayed there, had the cutest cottage — chenille spread & lamps & inside shower & toilet. Had breakfast & left there Sat. a.m., 10:30. Had dinner in Milford, Del. & arrived in Rehoboth Beach. All moved in & unpacked.
>
> "Love, Dorothy
>
> (P.S.:) "Forgot the ration books! Will you mail them to us?"
>
> — postcard mailed to Pittsburgh on July 23, 1945

From the very day that the Turnpike opened, the sounds of global conflict were echoing in the background. News of the road's opening shared front-page space with reports on Britain's five-hour bombing of Berlin — and Germany's latest bombing of London.

For the Turnpike, war brought several changes: A mushrooming in the number of troop and materiel movements, while civilian pleasure travel dried up; and an end to high-speed motoring.

A 35 mph fuel-conservation restriction was imposed on all highways by the federal Office of Defense Transportation, beginning in December 1941, although war supply movements were quickly exempted. Nationwide gasoline rationing began in March 1942, and tires also were rationed. It didn't take long for the effect to show up in toll-booth receipts, with the number of passenger cars falling by more than 70 percent, from 2.1 million in 1941 to just 581,000 in 1943.

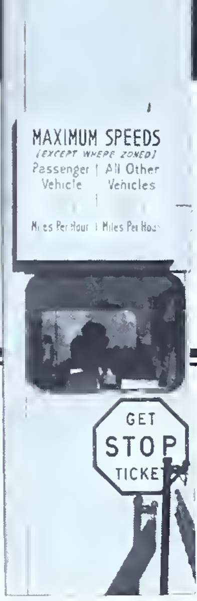
Reflecting the movement of materiel in convoys, the number of trucks rose from 48,000 in the last three months of 1940 to about 300,000 in 1942, and stayed fairly consistent through the war. Revenue dropped and the commission dipped into its financial reserves to meet bond obligations. The number of state troopers fell sharply, too, as some of them went off to war while the amount and kind of traffic left on the Turnpike required little supervision. From its initial strength of 59 men, the complement fell to 48 in 1941, 26 in 1942, 20 in 1943 and 1944, and just 11 in 1945. The young men who pumped gas at the service plazas traded their Standard Oil uniforms for Uncle Sam's. When they left, women replaced them at the pumps.

Because of the possibility of sabotage, special details of one or two state troopers, not part of the Turnpike troop, were posted at each tunnel entrance to inspect any vehicles whose appearance or driver's behavior raised suspicion.

"Should the conflagration now destroying Europe ever blaze across the Atlantic to sear these shores, the Pennsylvania Turnpike would ably demonstrate its ability to carry adequately the heavy gear of war," commented *Highway Builder*, the Pennsylvania construction industry's magazine. Another magazine wrote: "Over the Pennsylvania Turnpike (costing less than one battleship) a great army could be rushed eastward from beyond the mountains in the shortest possible time." In 1944, Congress recognized the military value of the Turnpike and passed a bill that outlined a national system of superhighways. While defense priorities precluded any immediate action, the bill became the prototype for the Interstate highway act a decade later.

With men in uniform, women took over at the gas pumps. PTC

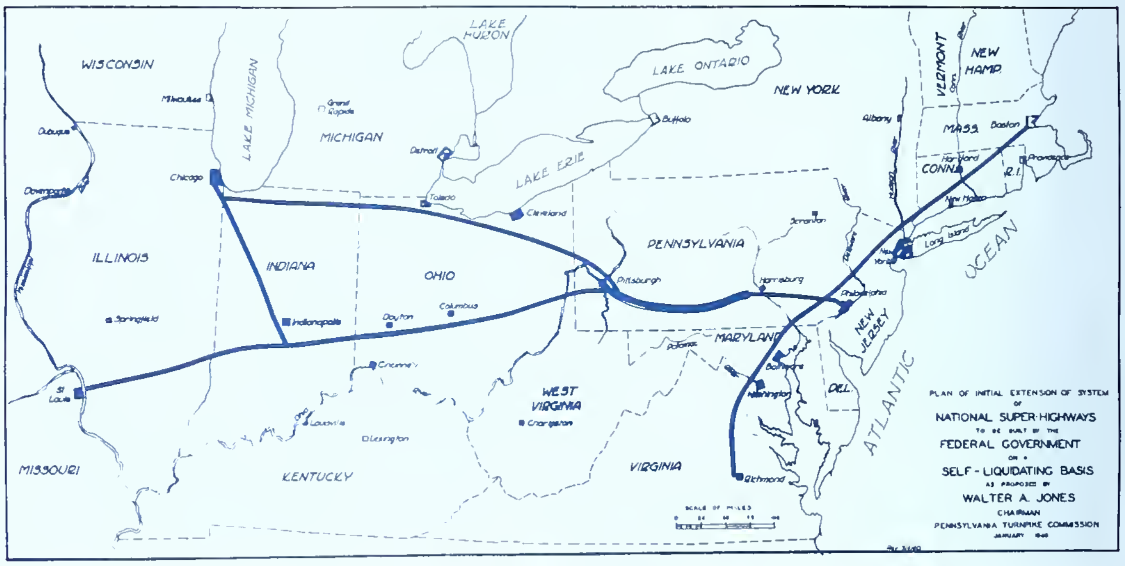
But the Turnpike played another, less visible, role in the war effort. Its engineers and supervisors, fresh from the experience of having built one of the world's most ambitious construction projects in just 23 months, went immediately to wartime work, building airports and defense installations in the United States and abroad.



AIMING FOR

With the end of the war in late 1945, the nation looked for a return to normal life. For the Turnpike Commission, this meant gearing up for a resumption of civilian and pleasure travel and reviving its plans for expansion. Walter Jones, the commission's first chairman and architect of a plan for 1,800 miles of toll superhighways that would serve 40 percent of the nation's population, had fallen into ill health and resigned his chairmanship in 1942, and then, effective September 1, 1943, his commission seat. He died just three days later. Two other original members, Frank Bebout and Charles T. Carpenter, had died earlier. In June 1943, Governor Edward S. Martin filled the vacancies with new appointments, and a reconstituted commission took up where Jones' vision had left off.

In 1946, the year tire rationing ended, the highway handled 2.4 million vehicles, a volume it had not seen since its first full year of operation. With the toll superhighway concept proven, the commission that year reorganized its financing, which was overseen by the Turnpike's trustee, or banker, Fidelity-Philadelphia Trust Co. It had been necessary to offer 3¾ percent interest to attract investors in 1938, but that was no longer the case, and the commission issued new bonds at lower interest (2½ percent) to raise capital to retire the old bonds, which saved about a half-million dollars a year. The pressure to expand came so quickly, however, that even this arrangement was inadequate, as it restricted the use of all revenue, toll and otherwise, to the original Middlesex-Irwin stretch of Turnpike. In pursuing the extensions to Philadelphia and Ohio, the commission would have been forced to set up three separate operating and accounting divisions, each with its own bond issues. New legislation was needed, and in 1947 Governor James H. Duff signed a law that wrapped the proposed eastern and western extensions and the existing Turnpike into one entity, allowing a new financing instrument to be created. This was known as the Trust Indenture of June 1, 1948. A total of $87 million worth of bonds was sold to finance the Philadelphia Extension, stretching 100 miles from Middlesex to King of Prussia (Valley Forge). Groundbreaking took place in York County on September 28, 1948.



Walter Jones' original proposal for 1,800 miles of Eastern and Midwestern toll expressways foreshadowed the coming of the national Interstate highway network. PTC

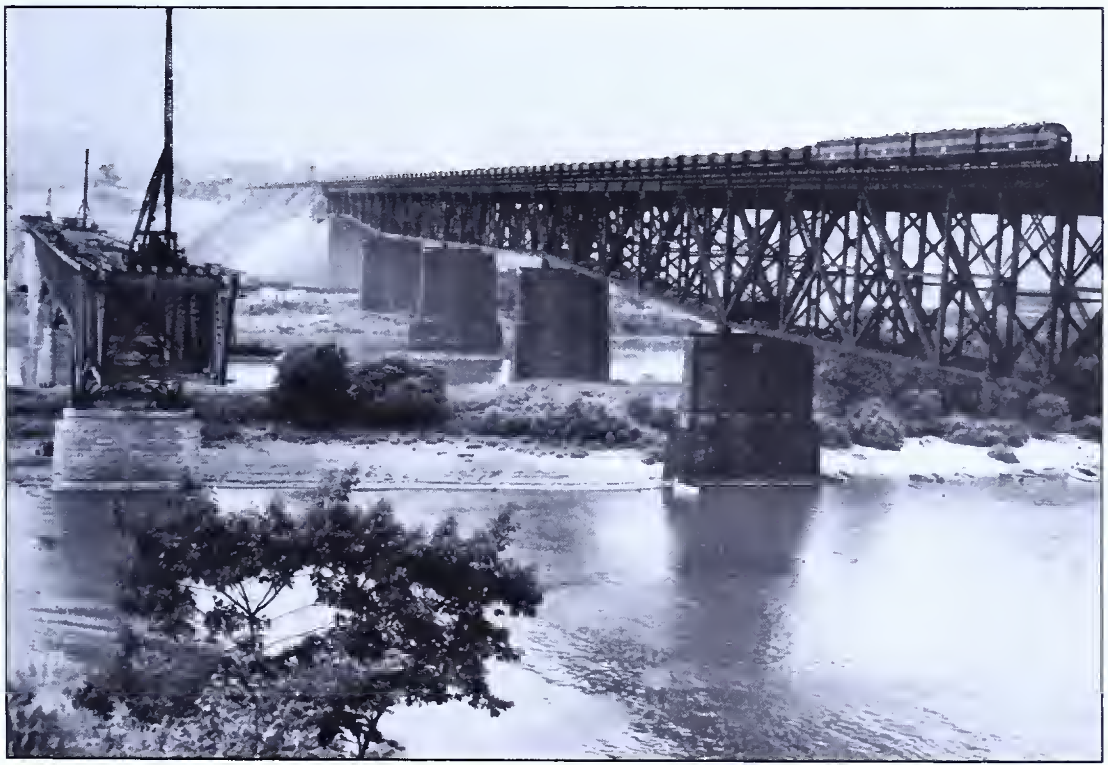
Governor James Duff and his wife Jean Taylor Duff pitch earth at groundbreaking for the Philadelphia Extension on September 28, 1948. PTC

PHILADELPHIA AND OHIO

Meanwhile, motorists and truckers continued to pour onto the original road. In 1949, the last full year before any of the extensions opened, the Turnpike handled 3.8 million vehicles, nearly three times what the early traffic planners had envisioned.

Besides encouraging internal improvements, the Pennsylvania experience enticed other states to build toll roads. Maine was the first, in 1945, authorizing a 47-mile road paralleling U.S. Route 1. While not a large project, it was significant because it was the first American toll road whose bonds were sold entirely on the basis of future toll revenue. In the years that followed, Colorado, Florida, Indiana, Kansas, Maryland, New Hampshire, New Jersey, New York, Ohio, Oklahoma, Texas, and West Virginia all took steps to create toll authorities or implement toll roads. Once dismissed as impractical, the toll road gained respectability and acceptance in engineering and financial circles.

Cars are lined up for the opening of the Pittsburgh interchange at 12:01 a.m., August 7, 1951. C.C. Schleicher of Wilkinsburg, heading east, is first motorist through the gate. PTC



Construction of the superstructure of the Turnpike's 2,180-foot-long bridge over the Allegheny River is about two-thirds complete in this 1951 view, which shows a southbound ore train of the Bessemer & Lake Erie Railroad near Oakmont. Bessemer & Lake Erie Railroad

Highway users weren't the only ones to notice the growth trend. In 1946 the Pennsylvania Railroad commissioned a centennial corporate history, which was published in 1949. Authors George H. Burgess and Miles C. Kennedy recounted the story of William Vanderbilt's South Pennsylvania Railroad, intended to compete with and undercut the Pennsy. "Nearly 100 years later," they wrote, "when the South Penn(sylvania)'s name was almost forgotten . . . much of the old right of way, with its grading and uncompleted tunnels, would fit into a scheme for a superhighway between Harrisburg and Pittsburgh, so at last events went through the full cycle . . . now highway vehicles supply the competition for which the South Penn(sylvania) Railroad was designed."

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While the original Turnpike had posed tunneling challenges, the 100-mile Philadelphia Extension encountered only the rolling hills of the coastal plain, passing north of Lancaster and south of Reading. The biggest job came in spanning the broad, shallow Susquehanna River, five miles downstream from Harrisburg. Engineers designed a bridge 4,526 feet long, with steel girders resting on concrete piers. On the Highspire side, the $5 million bridge passed through the Steelton plant of Bethlehem Steel Corp. The bridge superstructure was supplied and erected by Bethlehem, but it was fabricated elsewhere — only the handrails were made at Steelton.

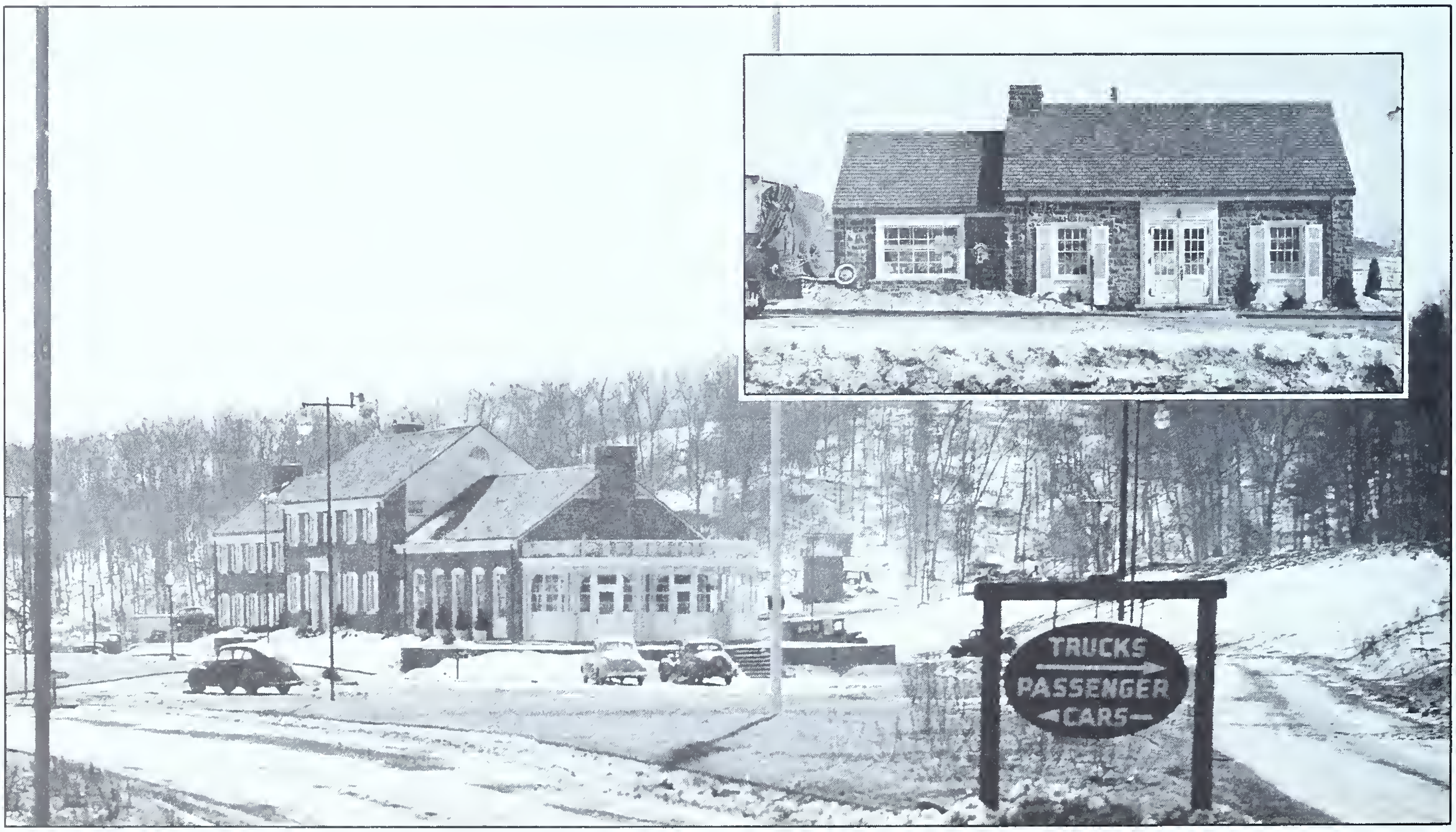
In all, 28 contracts were awarded to 17 firms for construction of the extension, which, like the original Turnpike, took about two years to build. It was opened on November 20, 1950 (except for the U.S. Route 15 interchange at Gettysburg Pike, which opened on February 1, 1951). The road's eastern terminus now lay just 15 miles northwest of downtown Philadelphia.

When the extension opened, the commission for the first time closed an interchange — the "barrier" toll booth at Carlisle, which stood across the main line of the highway and which served both Carlisle local traffic and Harrisburg traffic off U.S. Route 11 at Middlesex. The Carlisle ramps were closed and the Middlesex interchange, upgraded with toll booths and new ramps, was renamed to become the Carlisle exit. Even with the benefit of only a month's worth of new traffic contributed by the extension in 1950, the rising traffic trend was apparent. By the end of that year, the Turnpike had handled 4.4 million vehicles.

Begun about halfway through the building of the Philadelphia Extension, the 67-mile Western Extension was financed with $77.5 million in bonds. Work started on October 24, 1949. It was built by 18 firms under 27 contracts.

The Western Extension covered more rugged territory than that traversed by the Philadelphia Extension, encountering two major river crossings as it turned northwesterly past Pittsburgh and headed for Northeast Ohio. A 2,180-foot-long bridge was built across the Allegheny River near Oakmont, and a 1,540-foot-long, 175-foot-high bridge was built over the Beaver River north of Beaver Falls. The extension was opened in stages, first, from Irwin to Pittsburgh, on August 7, 1951; then to the Gateway interchange at the Ohio line, on December 26, 1951 (except for the Beaver Valley interchange, which opened March 1, 1952). Pennsylvania's construction timetable was far ahead of Ohio's, and when the Gateway interchange opened it poured torrents of traffic through tiny Petersburg, Ohio, much to the

W.E. Rauth of Penn Valley is the first motorist to enter the Valley Forge interchange. PTC



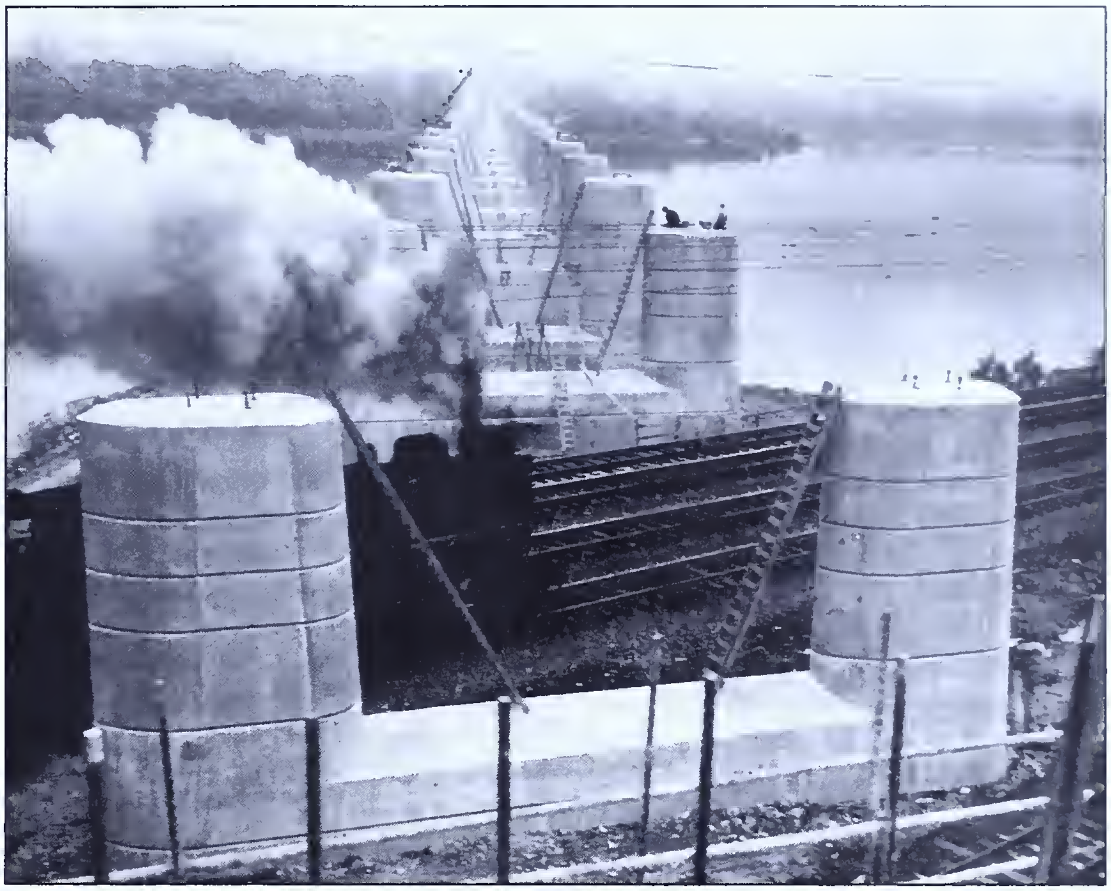
Large restaurant and service plaza at Midway served eastbound travelers. Westbound travelers gained access to it by stopping at the small facility (inset) across the roadway and using a pedestrian tunnel. Small restaurants were expanded immediately after World War II. PTC surprise of townfolk who were accustomed to a quiet life. The situation would last for nearly three years, until the Ohio Turnpike opened its initial 22-mile section from Gateway to North Jackson, on December 1, 1954.

Just as changes were needed at the Carlisle interchange, a realignment was necessary at the Irwin interchange — which also had a barrier-style toll booth — for the Western Extension. But the original toll booth site wasn't changed. The extension looped north of there, with connecting ramps and overpasses leading traffic to and from the existing toll area. Even today, westbound motorists can imagine the 1940 alignment as they swing around a right-hand curve approaching the Irwin exit ramp and peer straight ahead into the red and green directional lights of the toll booth lanes, while the highway veers to the right.

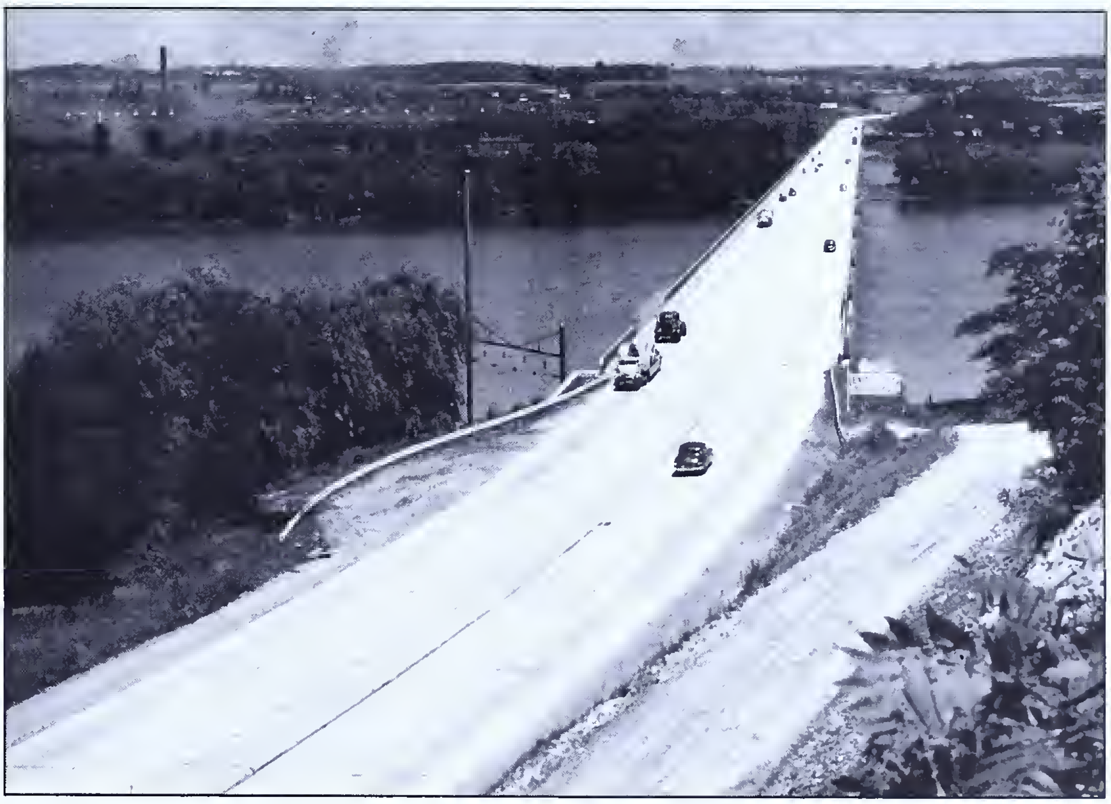
In building the extensions, engineers refined the designs and specifications used on the original Turnpike. Some technical adjustments to the kind of concrete used for the roadway were made, and an additional sub-base was laid for better drainage. Larger service plazas were built. As early as 1946, some of the small original service-plaza buildings were expanded to handle more people, and offered full meal service instead of just a coffee-shop menu. While Standard Oil had won the franchise to operate the service plazas on the original Turnpike, Gulf Oil Co., based in Pittsburgh, secured the franchises to the Philadelphia and Western extensions. Like Standard, Gulf subcontracted the restaurant services to Howard Johnson's.

For overpasses carrying local roads over the Turnpike, the Philadelphia Extension used designs similar to many of those that are the trademark of the original section — gracefully arched concrete bridges — but all of the overpasses on the Western Extension are of steel. Compared to the original Turnpike's design specifications (maximum grade of 3 percent and maximum curve of 6 degrees), those on the extensions were more generous, that is, straight and level. The Philadelphia Extension has grades of only 2 percent and curves of 3 degrees, and the Western Extension has grades of 3 percent and curves of 4 degrees.

Although the full Western Extension was open for only six days of 1951, that year's vehicle count reflected a ballooning growth in traffic with the addition of the Philadelphia Extension — 7.4 million vehicles, compared to 4.4 million in 1950. But the traffic would grow even more in 1952, when the availability of both extensions, stretching 327 miles, would push the volume to 11 million vehicles.



A northbound train operated by William Vanderbilt's old rival—the Pennsylvania Railroad—passes the Highspire construction site of the Turnpike's $5 million bridge over the Susquehanna River. PTC



In a view looking east, traffic moves over the newly completed Susquehanna bridge. PTC

Fare collector reads motorist's ticket at original Carlisle toll booth, closed when the Philadelphia Extension was opened. PTC

NEW YORK, CHICAGO

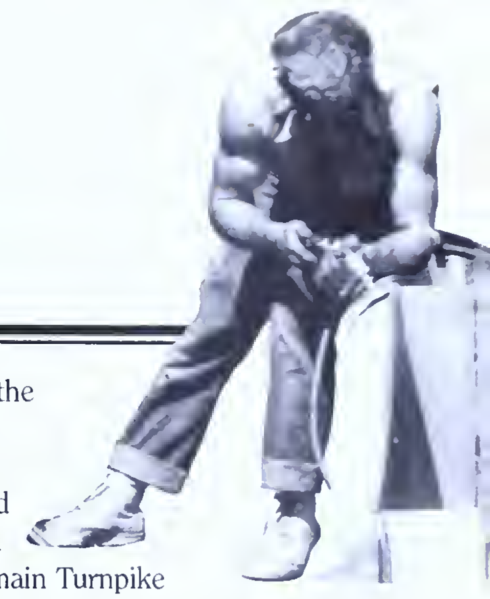
Now that the Turnpike had bridged the state, only one missing link remained: A 33-mile stretch from Valley Forge to Bristol, about 20 miles northeast of Philadelphia, and a proposed crossing of the Delaware River there. With a bridge, Turnpike travelers could pass into New Jersey and directly enter the New Jersey Turnpike, roughly at its midpoint. Begun in 1950 and completed two years later, that toll road extended from Ridgefield Park, N.J., opposite New York City, to a point opposite Wilmington, Del. In May and June of 1951, Governor John S. Fine signed legislation to allow construction of the extension and a joint toll bridge with the New Jersey Turnpike.

There was a hitch, though. The 1948 indenture under which the Philadelphia and Western projects were financed allowed additional extensions, but forbade any new work until the last previous project was open to traffic for two years. The commission would have had to wait until 1954 to start financing. An alternative was developed to move up the timetable, and in August of 1951, Governor Fine signed a bill to create a new financing instrument, the Indenture of September 1, 1952. Supplementing the 1948 indenture, this document was intended to be the tool by which all future expansion could take place.

To pay for the extension, as far as U.S. Route 13 on the west shore of the Delaware, the commission issued $65 million worth of bonds in September of 1952. Groundbreaking was held on November 20, 1952. As had occurred earlier at Carlisle and Irwin, expansion required a rearrangement at Valley Forge to convert it from a terminus to an offline interchange, and the new configuration was opened on June 9, 1954. It was designed to connect with a soon-to-be-completed highway intended to speed traffic to and from

This scenic photo along the Northeastern Extension was used to illustrate a New York Times travel feature about the Turnpike's 25th anniversary in 1964. PTC

—AND SCRANTON



downtown Philadelphia, the Schuylkill Expressway.

The largest structure on the extension was the 1,224-foot-long bridge over the Schuylkill River near Norristown. On August 23, 1954, the Turnpike was opened eastward, over this bridge, to the Norristown and Willow Grove interchanges. The Fort Washington interchange was opened on September 20, the Philadelphia interchange on October 27 and the Delaware Valley interchange on November 17.

In the meantime, the commission was looking to build not only the Delaware bridge but also a new spur reaching north to Scranton from the east-west main highway at a junction just east of the Norristown interchange. The concept of branch routes was not new, as a route to Scranton had been authorized as early as 1947. In 1954 the commission combined the financing of the $166 million Northeastern Extension and the Delaware bridge into a single $233 million bond issue under the 1952 indenture, setting the stage for what would be the final of many extensions proposed in the immediate postwar years.

Within a month of each other, groundbreaking ceremonies were held for the Northeastern Extension (March 25, 1954) and the Delaware Bridge (June 22, 1954). Constructed and jointly financed with the New Jersey Turnpike Authority, the bridge was opened on May 23, 1956. Its 135-foot height above water level was necessary because the Delaware is a navigable channel. The significance of the bridge was that motorists could travel between Maine and the Indiana-Ohio border (soon to be extended to the Chicago metropolitan area) without encountering a single stop light, cross street or grade crossing.

The first 37-mile section of the Northeastern Extension opened on November 23, 1955. On that date traffic began flowing from the junction at Norristown all the way to Lehigh Valley interchange (serving the Allentown-Bethlehem area). Intermediate interchanges were opened at Lansdale on December 3 and at Quakertown on December 10. From the Lehigh Valley interchange, another 10 miles of roadway was opened north to a temporary interchange at Emerald on December 28, 1955, while work continued on a two-lane, 4,461-foot-long tunnel through Blue Mountain. To distinguish it from the Turnpike's other tunnel through the same mountain on the original highway west of Carlisle, it was named Lehigh Tunnel.

On April 1, 1957, most of the remainder of the extension was opened (and the temporary interchange closed), as far north as the Wyoming Valley interchange near Wilkes-Barre. This 47-mile section contained not only the Lehigh Tunnel but also a 1,487-foot-long bridge over the Lehigh River. The final 16 miles to Scranton, which included a 1,627-foot-long, 160-foot-high bridge at Clarks Summit, was opened on November 7, 1957. With this, the Extension stretched for 110 miles and brought the system's total length to 470 miles.

Lost in all the enthusiasm over bond issues and expansion was the point that the original planners anticipated that the Turnpike would retire its debt by 1954 and be turned over to the state highway system as a free road. What those pioneer thinkers of the 1930s could not have foreseen were forces that pushed that idea ever further into the future, if not beyond reach. These included postwar economic inflation; the phenomenal rise in traffic flow, which demanded not only continuing high-level maintenance but also new spending on capital projects to handle the volume; and the need to incur new debt to finance extensions.

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The Northeastern Extension was by no means the only Turnpike branch to be proposed. Many new routes were drawn in the '40s and '50s, and several were authorized by legislation. A 1954 promotional brochure stated: "When finally completed, the Pennsylvania Turnpike will consist of more than 750 miles."

Among the proposals were:

◆ A continuation of the Northeastern Extension to the New York state line, near Binghamton, N.Y. Part of the preliminary grading for this highway can still be seen at the Scranton interchange. (The first proposal for the Scranton extension envisioned a junction with the main Turnpike at an undetermined point east of Harrisburg, and later maps showed the extension tying in as far east as the Delaware River Bridge.)

◆ A connection from Chester, Pa., near the Delaware state line, to the main Turnpike north of Philadelphia, known as the Chester Extension or the Philadelphia Loop Extension.

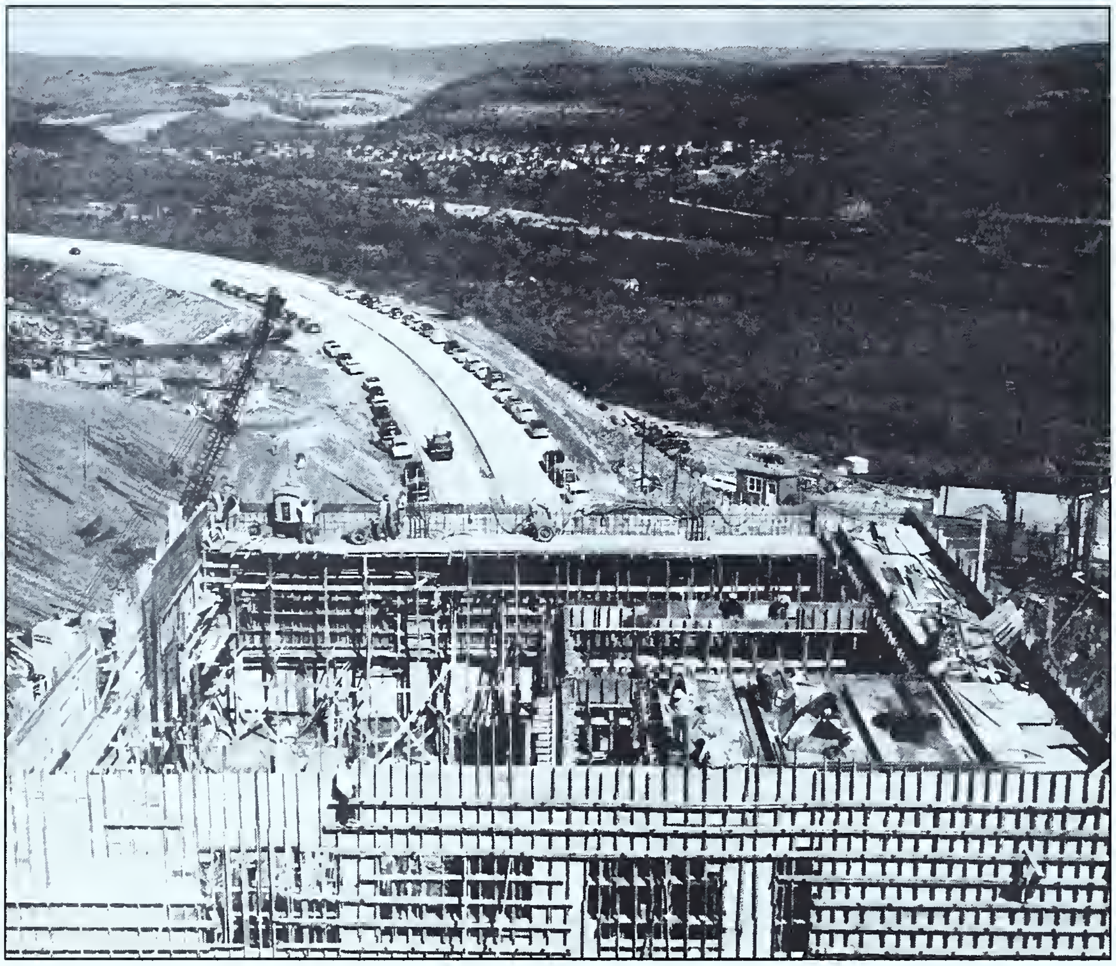
◆ An extension from Harrisburg to Gettysburg and the Maryland state line, known as the Gettysburg Extension.

◆ A connection from a point on the Turnpike near Pittsburgh to Erie (the Northwestern Extension), and another running south to West Virginia (the Southwestern Extension).

◆ A lateral highway through Erie County to connect the New York Thruway with Ohio (part of the Northwestern Extension).

◆ An east-west highway running from Stroudsburg, Pa., at the Delaware Water Gap on the Delaware River, to an unspecified point on the Susquehanna River (One map shows the terminus at Millersburg, Pa.). It later was revised to be a virtual parallel road to the main Turnpike, running all the way across the state from Stroudsburg to Sharon, Pa. This proposal was known as the Sharon to Stroudsburg Lateral Connection.

But events overtook all of these proposals. By 1954, national support for toll roads had begun to ebb, and in 1956 President Dwight D. Eisenhower signed the Interstate highway act. This set up the mechanism to provide $25 billion in federal funding for a nationwide system of four-lane, controlled-access free highways that would cure highway builders of their enthusiasm for toll roads. By offering 90 percent of the funding, the federal government made it highly attractive to state political leaders who, given a choice of paying 10 percent of the cost for a free road or assuming 100 percent of the bonded debt for a toll road, really had little choice. Ultimately, the Interstate system



Construction of the Lehigh Tunnel north of Allentown, as seen at north end portal housing, overlooking Lehigh River valley. PTC

would cost $118 billion. The commission's 1956 Annual Report listed several proposed extensions but, in a black-bordered notice, cautioned: "The feasibility of any of these extensions will be influenced by the National System of Interstate and Defense Highways."

Eventually, all of these highways were built, most but not all of them as parts of the Interstate system. The need for better intercity roads was never at issue, only the method of financing.

In fact, Turnpike planning for the Northwestern Extension had gone beyond preliminary engineering to final design when the Interstate program was activated. Turnpike engineers simply packed up all of the plans, correspondence, soils reports and other details and shipped them over to the Pennsylvania Department of Highways, which completed the design. Because of this head start, I-90 was one of the first Interstates to be built.

But there were others, too. Both the continuation of the Northeastern Extension and the original 1947 proposal that envisioned a Harrisburg-to-Scranton highway are now part of Interstate 81. In the Philadelphia area, the Chester link was envisioned as following the path of either the Maine-to-Florida highway, I-95, or the so-called "Blue Route," I-476. The Gettysburg Extension is U.S. Route 15, upgraded to four-lane semi-limited-access design. In Western Pennsylvania, the highway stretching from Erie to West Virginia is I-79, and the Stroudsburg-to-Sharon highway is I-80, which runs 2,908 miles from New York to San Francisco.

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Throughout the early '50s, the Turnpike's business mushroomed at an unprecedented rate. As extensions made the highway more accessible and postwar prosperity put a car within the reach of millions more Americans than ever before, traffic volume increased geometrically. The total in 1947, 2.5 million vehicles, doubled by 1951, then doubled again by 1953 and again by 1957, when the volume hit 22.7 million vehicles. By the following year, traffic had grown to 10 times what it had been in 1947.

While this had its benefits, it also resulted in one of the highway's darker chapters for safety, as the number of fatal accidents rose out of all proportion to increases in traffic volume. This was ironic, for the Turnpike had been engineered to eliminate many of the most persistent causes of accidents, such as intersections and limited sight distance for safe stopping. But legislators, police, traffic engineers and the public began to focus on two conditions that seemed to contribute most to serious accidents: High speed, and crossover collisions, in which a car ran out of control, crossing the unpaved grassy median strip headlong into opposing traffic. In 1940, traffic was so light that families stopped to picnic on the median strip. After the war, however, volume became so heavy that drivers suddenly finding themselves in a tight situation while passing used the strip as an escape. Especially when it was wet, the soft median strip could cause drivers to lose control, throwing cars into facing lanes or back into traffic.

In 1953 a 10-member joint legislative committee investigating Turnpike safety held hearings in Lancaster, Somerset and Harrisburg. Four dozen witnesses appeared, arguing for and against many purported remedies, among them lower speed limits, paving of median strips, installation of median guard rails, use of radar by state police, use of marked versus unmarked cruisers, and more police patrols. According to testimony, crossover accidents accounted for 10 percent of all accidents and 40 percent of fatalities, yet even expert witnesses disagreed about how to prevent them. Citing a California study, one said that median barriers themselves presented a collision hazard. Beginning January 1, 1953, the commission attempted to address the speed issue by imposing a maximum limit of 60 mph for the 163 miles of road between the Ohio state line and Breezewood, a section where mountain grades were more numerous, curves were sharper and winter weather more severe than elsewhere. (Since the opening of the Western Extension in 1951, speed limits had alternated between zones of 50 mph and 70 mph on the 163-mile stretch.)

Many witnesses at the hearings blamed speed, urging that a 60 mph limit be imposed systemwide, but consulting traffic-safety specialists from three outside companies hired by the commission claimed that most accidents occurred at 41 to 50 mph. Other factors singled out were driver fatigue and inattentiveness, and defective equipment such as bald tires that blew out at high speed. One witness suggested that lining the road with advertising billboards would keep drivers from falling into highway hypnosis (while generating revenue); another said the commission should install elevated towers along the roadway with observers who could shout over loudspeakers to alert errant or speeding motorists.

In the end, the commission not only "stabilized" the median strip by making it solid, but also improved drainage to prevent winter accidents that resulted from plowed snow melting, seeping back onto the road and freezing at night. The number of state police patrols was raised. From a total of 66 officers in 1953, the complement rose to 170 by 1960. Effective May 17, 1956, a systemwide 65 mph speed limit was established for cars, buses and motorcycles; all other vehicles were allowed 50 mph (later raised to 55).

Median guard rails were installed, beginning in 1957.

Results followed quickly. The year 1950 had been one of the poorest for fatalities — 91 deaths, for a rate of 12.4 fatalities per 100 million vehicle-miles, twice the Pennsylvania average. By 1957, the rate was down to 3.3 fatalities, and it has dropped almost steadily ever since. (By comparision, in the 1920s the national rate was 18 per 100 million vehicle-miles; by the late 1980s, the Turnpike rate was just .6 fatalities per 100 million vehicle-miles, compared to Pennsylvania's statewide average of 2.6.)

When the Northeastern Extension was built, its design called for just a four-foot median strip, but it was constructed as a raised curb. Other factors that have helped cut the fatality rate were addition of tire condition to the list of checkpoints covered under the state's vehicle inspection law, and better vehicle-handling technology, such as power steering and brakes and radial tires. Still others were the widespread implementation of driver-education programs in the state's public schools; improvements in safety engineering such as collapsible steering columns; and, most of all, seat belts and shoulder harnesses.

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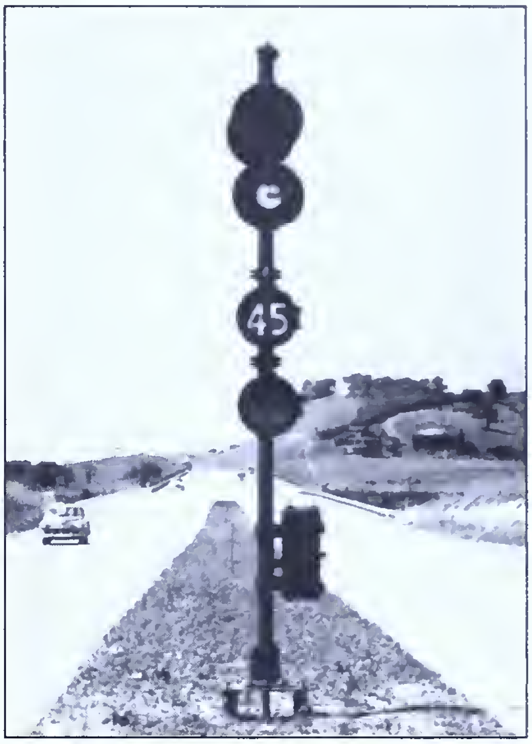
Other changes were taking place during the '50s. The rapid increase in traffic was wearing out the original 1940 concrete road surface, and in 1954 the first repaving — with a three-inch layer of asphalt — began on a 21-mile stretch east of Laurel Hill Tunnel. By September 8, 1962, the entire 160-mile original Turnpike had been resurfaced.

A program of continuous maintenance has long been a part of Turnpike operations. Under terms of the financing agreement, a certain portion of revenue is routinely set aside in a Reserve Maintenance Fund to provide ongoing repair and rehabilitation. From this arrangement a cyclical program has evolved so that about 10 percent of the system is rebuilt each year, with the result that the highway is completely renewed every 10 years. The same agreement requires the commission to hire an independent consulting engineering firm to inspect the system annually and advise the staff on maintenance needs.

Beginning in 1956, a new electronic toll system for truckers weighed vehicles and charged drivers by actual weight, not by allowable gross weight, a vast step over the 1940s method of toll collectors inspecting each rig. The Turnpike, with its more generous weight and length allowances, continued to handle trucks that would be considered illegal on other Pennsylvania highways.



For a while, the speed limit on bridges was 45 mph, indicated by railroad-like signals planted in the median strip. PTC

With headquarters staff outgrowing space in downtown Harrisburg, the commission made plans to move from its offices at 11 North Fourth Street to a new Administration Building at the Harrisburg East interchange near Highspire. Costing $3 million, it was opened January 15, 1957.

The commission continued to uphold and improve several kinds of traveler services and roadway maintenance. Among them were: A 24-hour systemwide radio communications and weather reporting system, which linked all Turnpike state police, all maintenance centers, and all toll booths; an aggressive winter maintenance program; and continued availability of towing and vehicle-repair service from authorized off-Turnpike service stations. In addition, the commission combined and enlarged some of its service plazas, and opened new service plazas on the extensions. These services had been around since the highway opened. But perhaps in light of the fact that the emerging new Interstate system would offer few of these services and guarantee none of them, Turnpike publicity materials took special note, saying that "Without them, the Turnpike is just another highway."

The Delaware River Bridge made a direct connection between the Pennsylvania and New Jersey turnpikes. PTC

UNCORKING THE

By 1960, the Turnpike was preparing to count its 200 millionth vehicle, and it was clear that something had to be done to manage the growth. With annual traffic volume now running at 31 million vehicles, or 24 times what the planners had imagined, congestion became the rule, not the exception. The seven east-west tunnels, a marvel of engineering in their day, now inspired contempt rather than awe. As early as 1951, eastbound traffic backups occurred at Laurel Hill Tunnel during summer weekends, and by 1958 it was a common sight any time between June and November. Lines of traffic stretched back as much as five miles from the tunnel mouth, waiting to squeeze from two lanes to one. With system route expansion at its practical limits, the commission turned its attention to internal improvements.

This was not just desirable, it was necessary. Built more than a decade after the original Turnpike, the paralleling New York Thruway was constructed to more contemporary highway standards, and began to slice into Pennsylvania's market share of east-west travel. Even top commission officials publicly called the two-lane tunnels and relatively narrow median strips obsolete.

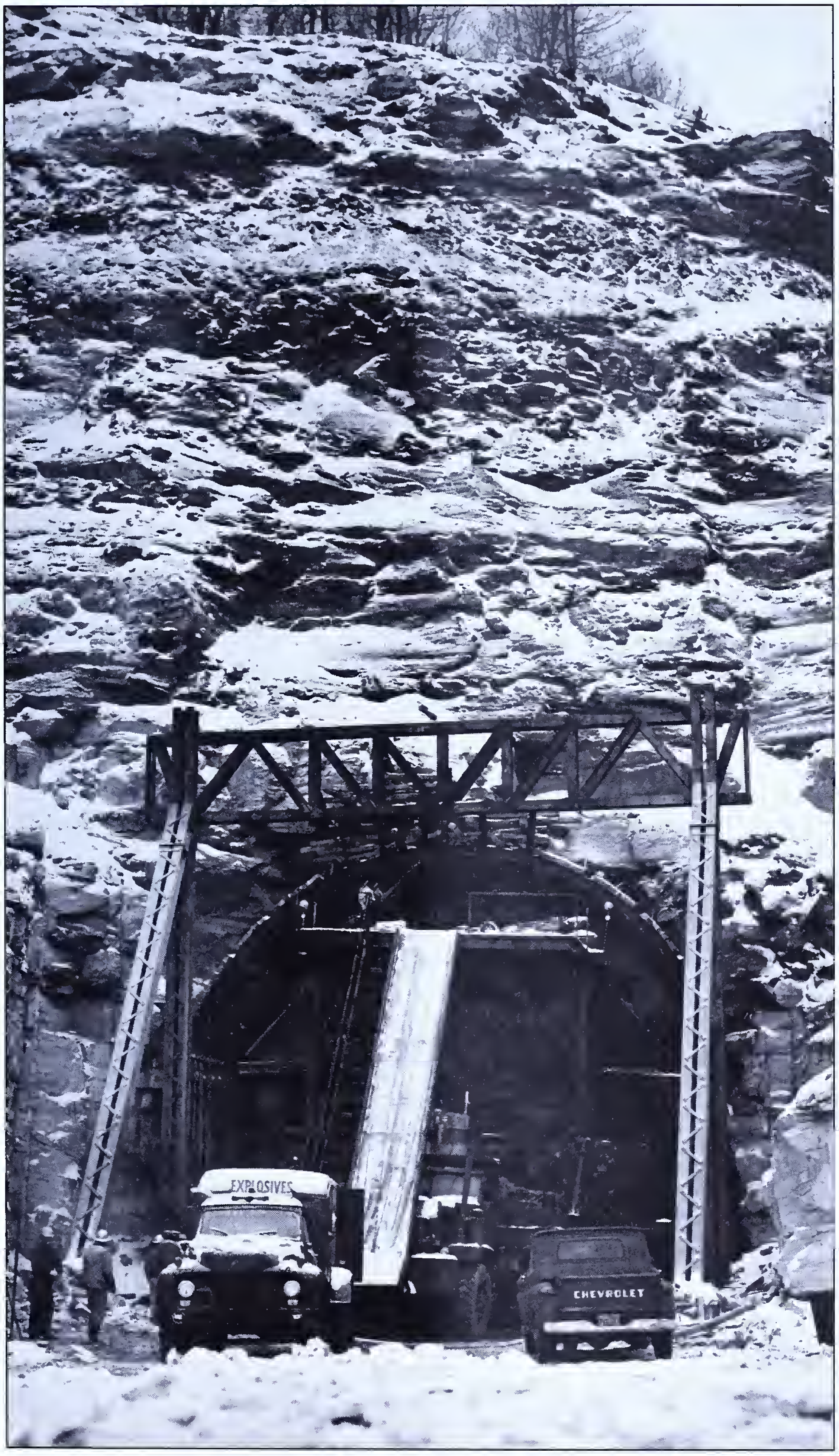
A second threat to the Turnpike's traffic flow was only a spadeful of earth thrown at a groundbreaking ceremony on March 19, 1959, when work began near Corsica, Pa., on the first stretch of the Keystone Shortway — Interstate 80, the highway that had once been proposed as the Turnpike's Sharon to Stroudsburg Lateral Connection. Even in the Shortway's infancy, Philadelphia city officials, including Mayor Richardson Dilworth, opposed the highway on grounds that it would divert revenue from the Turnpike and deflect trucking freight from the Delaware River docks to the port of New York — a kind of revival of the 1830s trade rivalry of seaport cities.

By mid-1959, a Turnpike engineering study was under way to determine the costs and benefits of building new two-lane parallel tunnels at Laurel Hill and Allegheny Mountain tunnels. Additional studies followed on ways to break the logjams at the five other east-west tunnels: Ray's Hill, Sideling Hill,

Blast loosens rock and earth at the Laurel Hill Bypass excavation site. PTC

Double-tunneling is under way at west end of Allegheny Mountain. PTC

BOTTLENECKS



Ventilating fans are installed above a new tunnel.
PTC

Tuscarora Mountain, Kittatinny Mountain and Blue Mountain.

The result was the beginning of a $100 million program that would extend over most of a decade. First, the commission decided to build a three-mile-long bypass over Laurel Hill and around the tunnel, which was to be closed. Work began on September 6, 1962. The new roadway, featuring a broad median strip and a third, low-speed truck climbing lane in each direction, opened on October 30, 1964. The highest elevation on the Turnpike, previously about 2,200 feet in the Laurel Hill Tunnel, was raised to 2,603 feet when the bypass opened, even though the bypass was built to the same engineering standards and maximum grade steepness as on the rest of the highway. Excavation crews chiseled a 145-foot-deep cut out of the top of the mountain, nearly as deep as the Clear Ridge Cut on the original 1940 construction. But this cut required removal of 5.5 million cubic yards of earth and rock, or five times the amount hauled out of Clear Ridge.

The second improvement was construction of a parallel two-lane tunnel at Allegheny Mountain, which, with the closing of Laurel Hill, now became the westernmost tunnel on the system. Engineers briefly considered using the never-completed Vanderbilt railroad tunnel that still lay adjacent to the highway tunnel, but rejected it for the same reasons that had prevailed in 1939. In the $8.3 million project, a new tunnel was blasted out 125 feet south of the existing one. Technology and design had come a long way since the first Allegheny tunnel was built. For

Left: Explosives arrive at the east portal of the new Allegheny Mountain tunnel. Johnstown Tribune-Democrat

Bridge construction is nearly complete at east end of Sideling Hill-Ray's Hill Bypass. Land in background has been cleared for new Sideling Hill service plaza. PTC

Excavation at Tuscarora Mountain tunnel (east portal) shows dumping of waste rock from inside tunnel. PTC

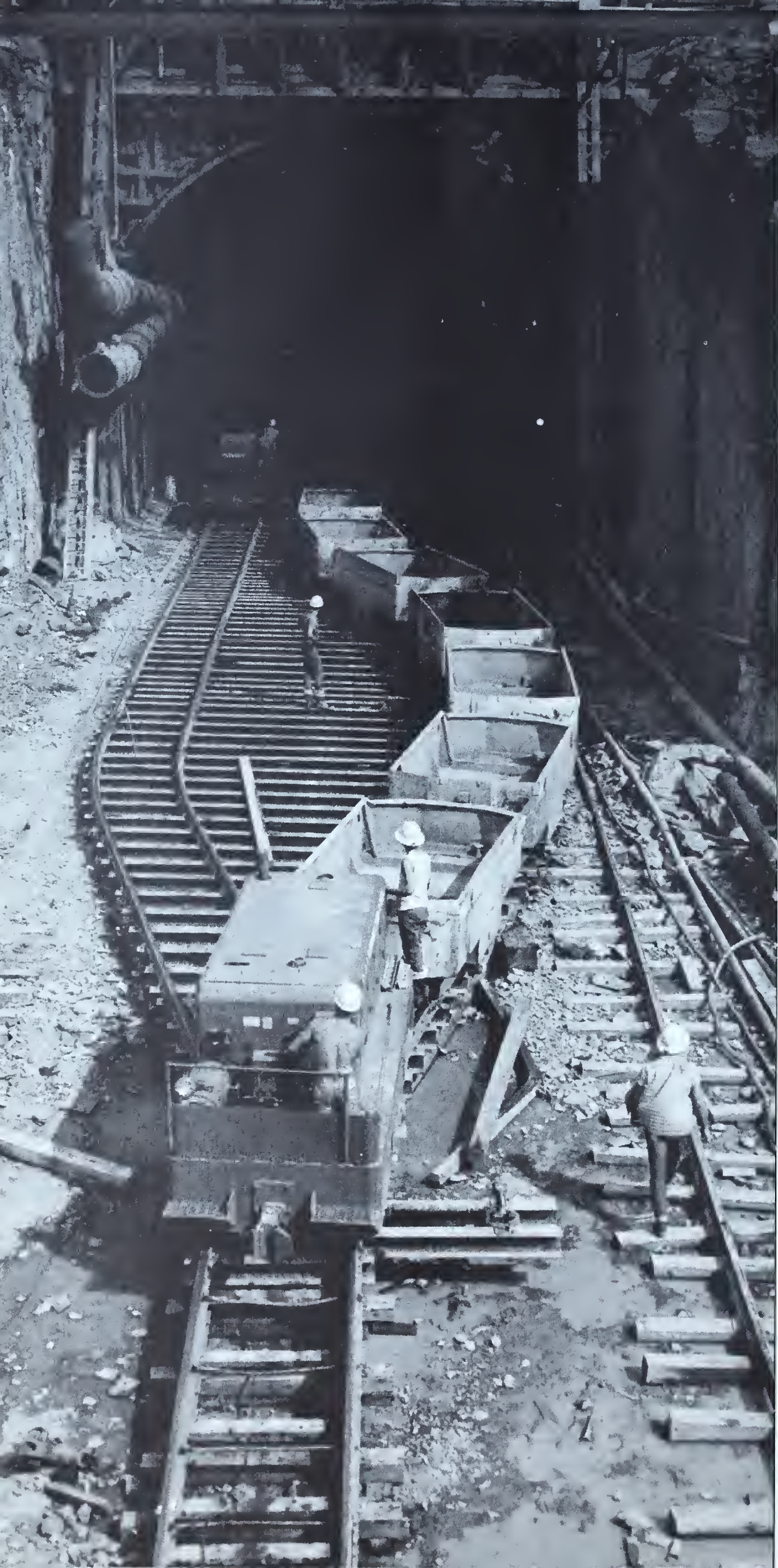
Rail-mounted "jumbo" excavation platform stands outside west portal of Kittatinny Mountain tunnel. PTC

motorists, the biggest change was a bright interior look, brought about by white-tile walls and fluorescent lighting, both easier to clean and maintain than the old recessed lighting in the dingy concrete lining. Other improvements were a more powerful ventilation system, increased clearances, and an entirely new portal building and control center. When the new tunnel opened on March 15, 1965, all traffic was diverted through it while the older one was closed for a $3 million modernization to bring it up to the standards of its twin. It was reopened on August 25, 1966, providing unrestricted four-lane tunnel passage for the first time in Turnpike history.

Meanwhile, studies had indicated that parallel tunnels would be the most economical choice at three other sites. Work began on a second tunnel, to cost $9.8 million, just north of the original Tuscarora Mountain tunnel, on April 11, 1966. A week later, on April 18, groundbreaking was held for a $16.3 million project to add tunnels just south of the original Kittatinny Mountain and Blue Mountain tunnels.

In between these projects and the Allegheny-Laurel Hill improvements lay two remaining tunnels, the original Turnpike's longest, Sideling Hill (6,782 feet), and its shortest, Ray's Hill (3,532 feet). A 1961 en-

Right: Inside Allegheny Mountain tunnel, the jumbo is moved up to working face so holes for the next round of explosives can be drilled in the rock wall. PTC



gineering report determined that the best way to ease congestion was to abandon the tunnels and channel traffic over a new 13.5-mile bypass. From July 1966 to March 1967, the commission awarded three roadway contracts totaling $17.2 million, and an additional $2.5 million was spent on a new Sideling Hill service plaza to replace the old Cove Valley plaza along the abandoned section of highway. The new plaza featured crossover ramps, allowing it to serve both east- and westbound traffic.

As at Laurel Hill, contemporary design standards were used for the Ray's Hill-Sideling Hill bypass. Engineers kept the easy 3 percent grade, used a wider median strip and added a third, truck-climbing lane at each end. From the west, the roadway looped south of the existing right-of-way, then crossed over to the north side above Sideling Hill Tunnel.

The bypass design was six-tenths of a mile longer than the 1940 alignment.

All of these projects — the Ray's Hill-Sideling Hill bypass and the new tunnels at Tuscarora, Kittatinny and Blue mountains — were opened on the same date, November 26, 1968. Contracts totaling $11 million were awarded for modernization of the three original tunnels at those sites. Just as had been the case at Allegheny Mountain, cars and trucks used the new tunnels while the original tunnels were shut down for rebuilding.

Yet even before the ambitious tunnel-and-bypass program was finished, a new study was commissioned in 1967 to forecast traffic volumes and needs for the Carlisle-Irwin section through 1990.

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The steadily growing traffic that made the Turnpike's $100 million program necessary also was putting a strain on the interchanges, many of which had not been enlarged since their construction in 1940. In the decade between 1960 and 1970, annual volume rose from 31 million vehicles to 52 million.

In October 1963, work began on a $1.6 million replacement for the New Stanton interchange — a major gateway to U.S. Route 119 and Interstate 70. The old toll booths and ramp layout, requiring left turns across traffic both within the interchange and onto state highways, had caused a chronic traffic bottleneck. On November 12, 1964, the new interchange was opened with grade-

Left: Railcars, used to remove blasted rock from Blue Mountain-Kittatinny Mountain improvement project, re-enter the excavation for another load. PTC separated access to and from Interstate 70. Aside from the original endpoint barrier booths, it was the first interchange to be replaced, not just expanded.

Other interchanges faced major changes, too. A total of more than $3.2 million was spent to enlarge the Gateway interchange from eight lanes to 11, to increase capacity at the Pittsburgh interchange to 10 lanes, and to open a new Harrisburg East toll plaza to provide direct access to Interstate 283 to Harrisburg and Pennsylvania Route 283 to Lancaster. All three projects were completed in 1969.

The Ray's Hill-Sideling Hill bypass reconfiguration also involved construction of a new $3.1 million Breezewood interchange. Completed in October 1970, the project raised the number of lanes from four to 10, recognizing the growing importance of the Interstate 70 gateway to the Baltimore-Washington area. Part of the old Turnpike became the Breezewood access road to U.S. Route 30.

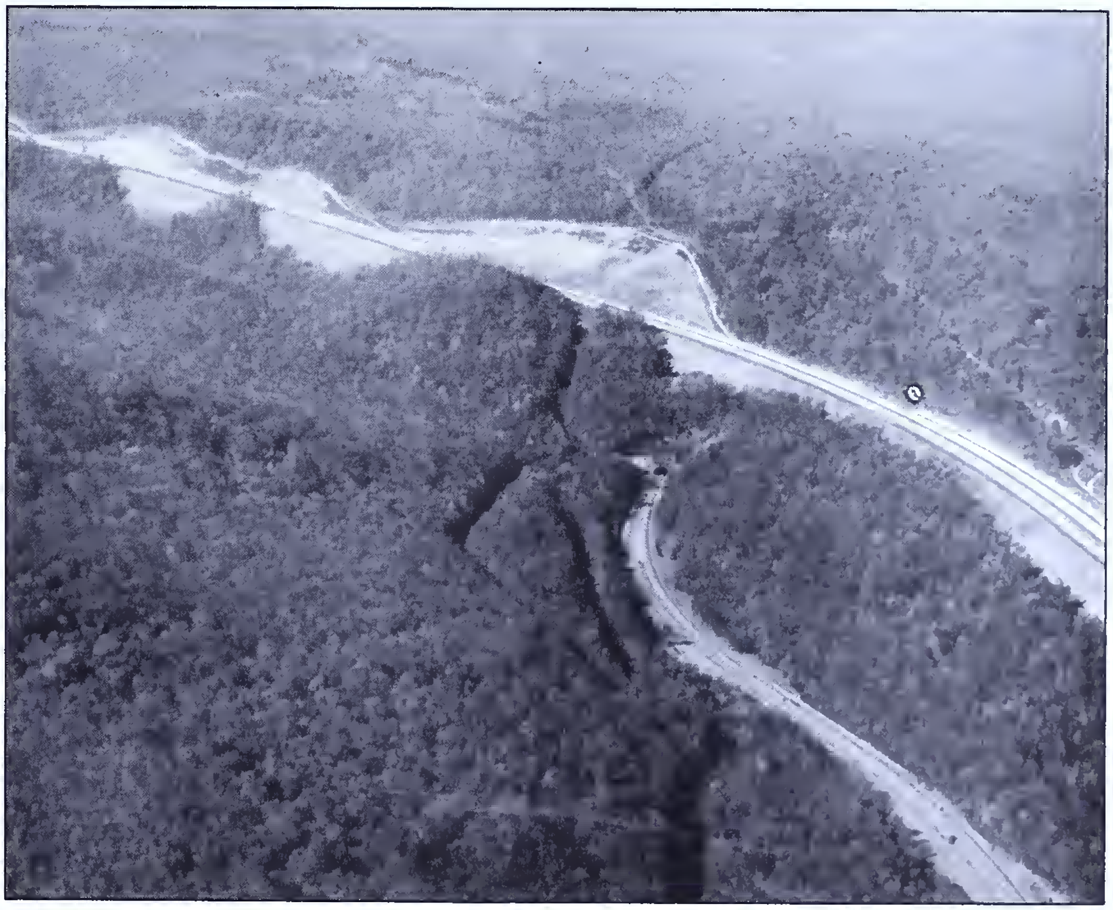
Plans were drawn up for a new toll plaza and ramps, costing about $2.7 million, at the Reading-Lancaster Interchange. This upgrading was needed because U.S. Route 222 was being rebuilt as a four-lane, limited-access divided highway. As traffic grew systemwide, most of the busiest interchanges were, if not replaced or rebuilt, at least enlarged by the addition of one or more lanes. The Perry Highway interchange, for example, was enlarged because of new traffic brought by the opening of I-79.

But an even more ambitious plan was in the works for the eastern part of the Turnpike. Although the highway was intended for intercity travel, by the late '60s a pattern of residential, industrial and commercial development around Philadelphia began to attract many commuter-type trips, complete with morning and evening rush hours. Some means was needed for commuters to get on and off the Turnpike with a minimum of delay at the toll booths. In 1968, the commission's consulting engineers, Michael Baker Jr., Inc., conducted a study into the possibility of starting a major reconstruction of the easternmost 47 miles of the Turnpike, from the Morgantown interchange to the Delaware River. The price tag of $386 million was too high, given the existing and expected toll revenue, so commission members and engineers alike pondered a scaled-back $14 million plan of converting that stretch from a "closed-ticket" toll system to a barrier-style (pay as you go) toll system. Soon, a consultant report indicated, the project was "assigned the highest priority by the commission and will be completed as soon as practical."

Other developments were under way. On August 14, 1969, the final section of median barrier was placed on the Northeastern Extension, four years after guard rail had been completed on the east-west Turnpike. As revenue continued to rise during the '60s, observers remarked that the toll rate was unchanged since 1940. Even *The New York Times*, in a 1965 story about the Turnpike's 25th anniversary, noted that the commission had held the line, while increases were necessary in Connecticut, Massachusetts, New York and Ohio. But inflationary trends caught up in Pennsylvania, too, and on September 1, 1969, the commission raised the passenger-car rate from 1 cent per mile to 1.9 cents. It was the first toll increase in 29 years.

A dispatcher at work in the old communications center next to the original Harrisburg East interchange.
PTC

With the 1940 road surface wearing out by the late 1950s, resurfacing the highway became necessary.
PTC



Sideling Hill tunnel on the original Turnpike was abandoned when the Ray's Hill-Sideling Hill Bypass opened in 1968.
PTC

THE UNCERTAIN

The opening of the 1970s found the commission putting finishing touches on some projects, while investigating new opportunities and, in the end, being forced to shelve many of them.

Most important was the completion of the tunnel-bypass program. The original Tuscarora Mountain tunnel, now renovated, was reopened in October 1970, and the final step in the process, the reopening of the refurbished original Kittatinny Mountain and Blue Mountain tunnels, took place on March 18, 1971. Four twin tunnels had replaced the original layout of seven two-lane tunnels. For the first time in more than 30 years, no east-west traveler had to squeeze into line to creep through a tunnel.

It was none too soon. Costing $424 million and stretching 313 miles across north-central Pennsylvania, Interstate 80 had been opened in its entirety on August 26, 1970. Although the highway contained no tunnels, it, too, was an engineering accomplishment — its 270-foot-high bridge over the Allegheny River was (and is) Pennsylvania's highest roadway bridge — and soon would become a major trucking route between Northeast and Midwest. The Turnpike's investment in modernization was essential to staying competitive. Even seasoned traffic specialists couldn't accurately predict what effect the opening of I-80 would have on the Turnpike as an east-west carrier. One study suggested that it could cut revenue by as much as $12 million a year, at a time when the highway's annual revenue was running at more than $70 million.

The Northeastern Extension was only 12 years old by the late '60s, but traffic congestion at the two-lane Lehigh Tunnel north of Allentown was already well past the comfortable point. A 1970 engineering study recommended, after considering several alternate routes around the mountain, construction of a parallel two-lane tunnel, at a cost of $14 million. The traffic volume and revenue on the Northeastern Extension (and the Delaware River Extension, as well) had been disappointing ever since it was opened, but now congestion was beginning to appear, magnified by the old problem of forcing motorists to merge into one lane at tunnel entrances. While I-80 was viewed as a competitor to the east-west Turnpike, it drew more travelers and truckers onto the Northeastern Extension, with which it connected at the Pocono Interchange near White Haven. Further, as a recreational destination the Poconos began to pull in more tourists and vacationers. The study showed that bypassing the tunnel would cost $14 million to $47 million and add six to eight miles of roadway to the system. Tunneling plans were begun.

As for the proposed 47-mile changeover in toll-collection methods between Morgantown and the Delaware River, its estimated cost had more than doubled, once plans for the conversion were completed — from $14 million to $35 million. The project that once enjoyed the status of top priority suddenly was thrown into limbo, and the reason is explained in a 1971 engineering report: "The commission has deferred this project pending the development of updated traffic and revenue estimates in view of the recent opening of the new I-80 (Keystone Shortway). Substantial toll revenue reduction has been experienced, particularly because of the diversion of commercial vehicles to the Shortway."

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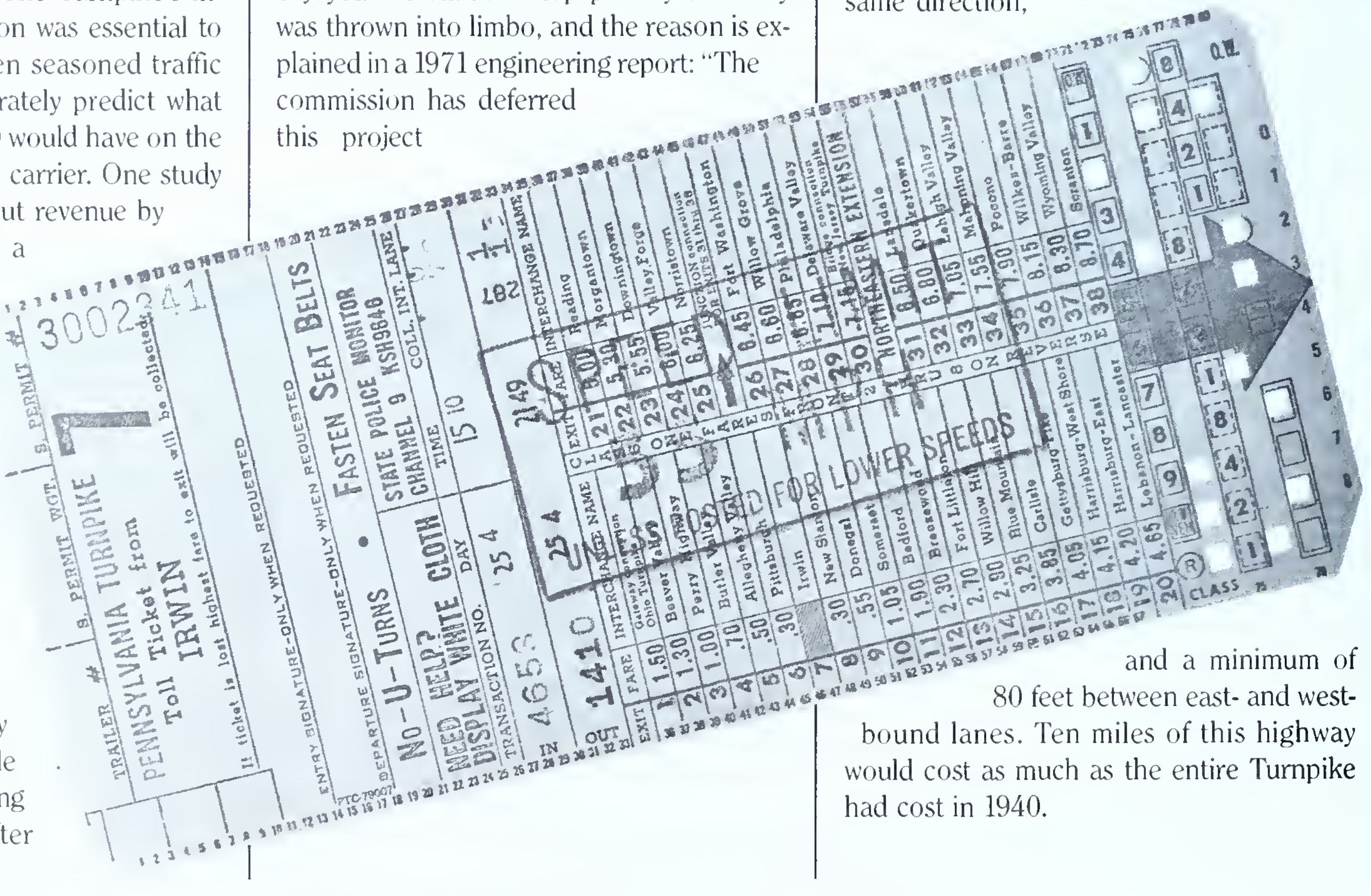
All of these plans, fulfilled or not, were a mere drop of oil in the crankcase of one of the grandest engineering proposals of all — one whose magnitude rivaled the construction of the original Turnpike. Titled simply "Engineering Report on Turnpike Improvements 1970–1990," this plan envisioned a $1.1 billion, eight-lane modernization of the Turnpike's original section through the Alleghenies. The most striking part of this plan was the concept of providing four distinct and separate roadways, split by direction of travel and type of user — two lanes for autos only in each direction and two lanes for trucks only in each direction. Called a Dual-Dual design, it would require a 400-foot-wide right-of-way, with a minimum median-strip distance of 64 feet between the auto and truck lanes in the same direction, and a minimum of 80 feet between east- and west-bound lanes. Ten miles of this highway would cost as much as the entire Turnpike had cost in 1940.



TRAILER #

S. PERMIT WGT.

S. PERMIT #

3002241

PENNSYLVANIA TURNPIKE
Toll Ticket from
IRWIN

If ticket is lost highest fare to exit will be collected.

ENTRY SIGNATURE-ONLY WHEN REQUESTED

DEPARTURE SIGNATURE-ONLY WHEN REQUESTED

FASTEN SEAT BELTS

NO-U-TURNS • STATE POLICE MONITOR
CHANNEL 9 KSH9846

NEED HELP?
DISPLAY WHITE CLOTH

COLL. INT. LANE

TIME 15 10

DAY 25 4

TRANSACTION NO. 4653

IN 1410

OUT

2149

182

25 4

EXIT	FARE	INTERCHANGE NAME
1	1.50	Gateway Ohio Turnpike connection
2	1.30	Beaver Valley
3	1.00	Perry Highway
4	.70	Butler Valley
5	.50	Allegheny Valley
6	.30	Pittsburgh
7		Irwin
8	.30	New Stanton
9	.55	Donegal
10	1.05	Somerset
11	1.90	Bedford
12	2.30	Breezewood
13	2.70	Fort Littleton
14	2.90	Willow Hill
15	3.25	Blue Mountain
16	3.85	Carlisle
17	4.05	Gettysburg Pike
18	4.15	Harrisburg-West Shore
19	4.20	Harrisburg-East
20	4.65	Lebanon-Lancaster

EXIT	FARE	INTERCHANGE NAME
21	5.00	Reading
22	5.30	Morgantown
23	5.55	Downingtown
24	6.00	Valley Forge
25	6.25	Norristown connection JUNCTION for exits 31 thru 38
26	6.45	Fort Washington
27	6.60	Willow Grove
28	6.65	Philadelphia
29	7.10	Delaware Valley
30	7.15	Delaware River Bridge connection New Jersey Turnpike
		NORTHEASTERN EXTENSION
31	6.50	Lansdale
32	6.80	Quakertown
33	7.05	Lehigh Valley
34	7.55	Mahoning Valley
35	7.90	Pocono
36	8.15	Wilkes-Barre
37	8.30	Wyoming Valley
38	8.70	Scranton

FOR LOWER SPEEDS

CLASS

PTC 79007

'70'S

This was a road for the future, a mega-Turnpike with an 80 mph design speed, holographic road signs and electronic icy-road warning devices. From Irwin to the Allegheny Mountain tunnel and from Carlisle to the Blue Mountain tunnel, the road would stay on or near the existing highway site, with two- to five-mile bypasses here and there to straighten out the alignment, and new interchange locations at Bedford and Donegal. (The historic Midway service plaza, jewel of the 1940 Turnpike, would be closed and a new plaza opened five miles to the east.) But in the 80 miles between Blue Mountain and Allegheny Mountain, all manner of reroutings were drawn across the forested folds and tucks of the rugged countryside. At the tunnels, the new highway would soar through more and grander bypasses, or slip through still more parallel tunnels. Most dramatic of all was a proposal to abandon the eight-mile climb from New Baltimore to the east portal of Allegheny Mountain tunnel, completely rerouting the eight-lane highway to nearby ridgetops. Autos would bypass the tunnel on an entirely new line over the top of the mountain, while trucks would continue to use the tunnel. In the high-volume corridor between New Stanton and Breezewood, a 10-lane roadway would be needed.

Accepting the realities of the revenue outlook, the report offered a $356 million compromise plan to upgrade the most heavily used section to eight-lane design and still allow 70 mph speeds. The entire $1 billion package, the report admitted, represented improvements that were "principally non-revenue producing, although they must be made to meet the present and future needs of the system."

Those who anticipated the future needs of the system, however, could not have predicted repeated disruptions in the flow of im-

Opposite page: A rubber-stamp reminder on toll tickets reinforced the 55 mph national speed limit that arrived with the fuel-supply crisis of 1973–74. PTC

Right: Work began in the 1970s on the Allegheny Mountain bypass improvement project. PTC

ported oil, or a 55 mph national speed limit that would make an 80 mph highway an extravagance.

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Before the decade was very old, an internal change took place with the Turnpike staff. New legislation allowed state employees to organize for collective bargaining, and by early 1972 the Teamsters Union became the bargaining agent for both field and central office employees. The commission's consulting engineer, in its 1972 report, complimented both sides on the "transition from a non-union to a union facility with no interruption in service to the Turnpike patron." It continued: "The job protection provided to the Turnpike employee is a major achievement and benefit to both sides. An employee no longer must worry about his position during election years and the commission will retain (staff) in whom time and money have been invested for training." In nearly 20 years of union representation of staff, there has never been a work stoppage or strike.

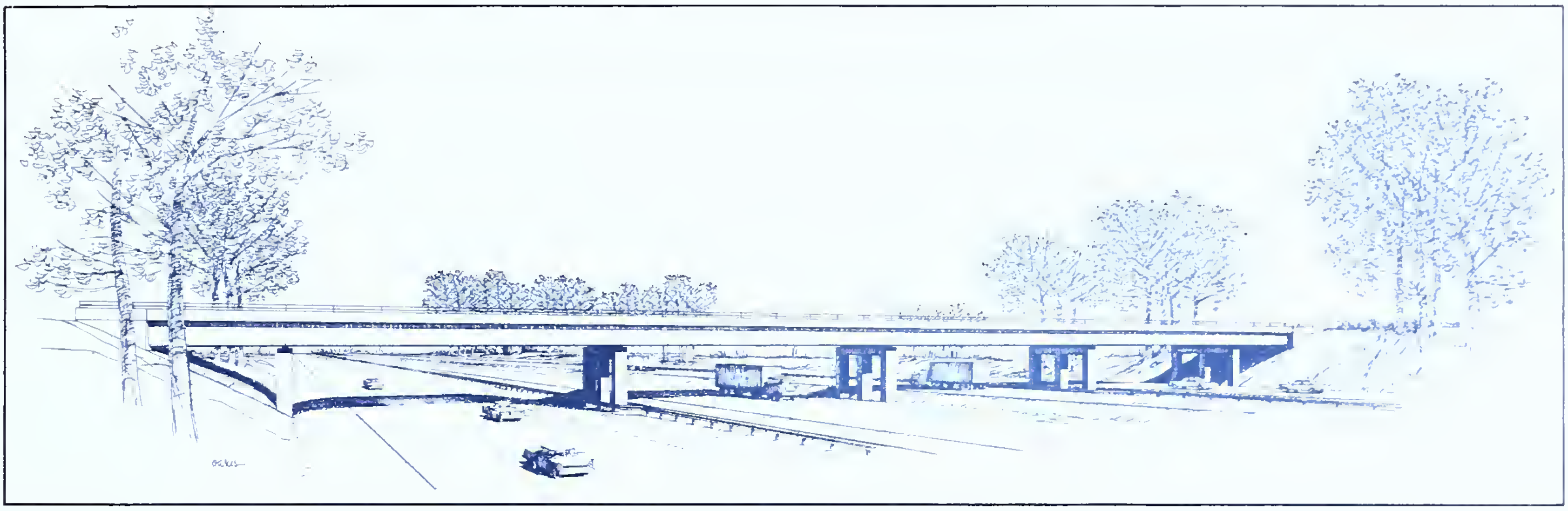
The opening of Interstate 80 had some effect on Turnpike traffic, but in the end it was not nearly as bad as first imagined. One study had estimated that traffic would fall from about 53 million vehicles to 49 million, but in fact in fiscal 1971-72, it exceeded the estimate by 5 million vehicles.

As the first Arab oil embargo hit in 1973-74 and lines at the gasoline pumps grew, however, many motorists stayed within a tankful of home, fearing that inability to find an open service station would leave them stranded. Total vehicle volume dropped from 57 million in 1973 to 55 million in 1974 and 1975 before edging back up to 57 million in 1976.

Whether it was real or manufactured, as many drivers suspected, the energy shortage immediately curtailed the nation's driving habits. A federally mandated speed limit of 55 mph, in the interest of fuel conservation, was imposed, and it was enforced on the Turnpike beginning on December 2, 1973.

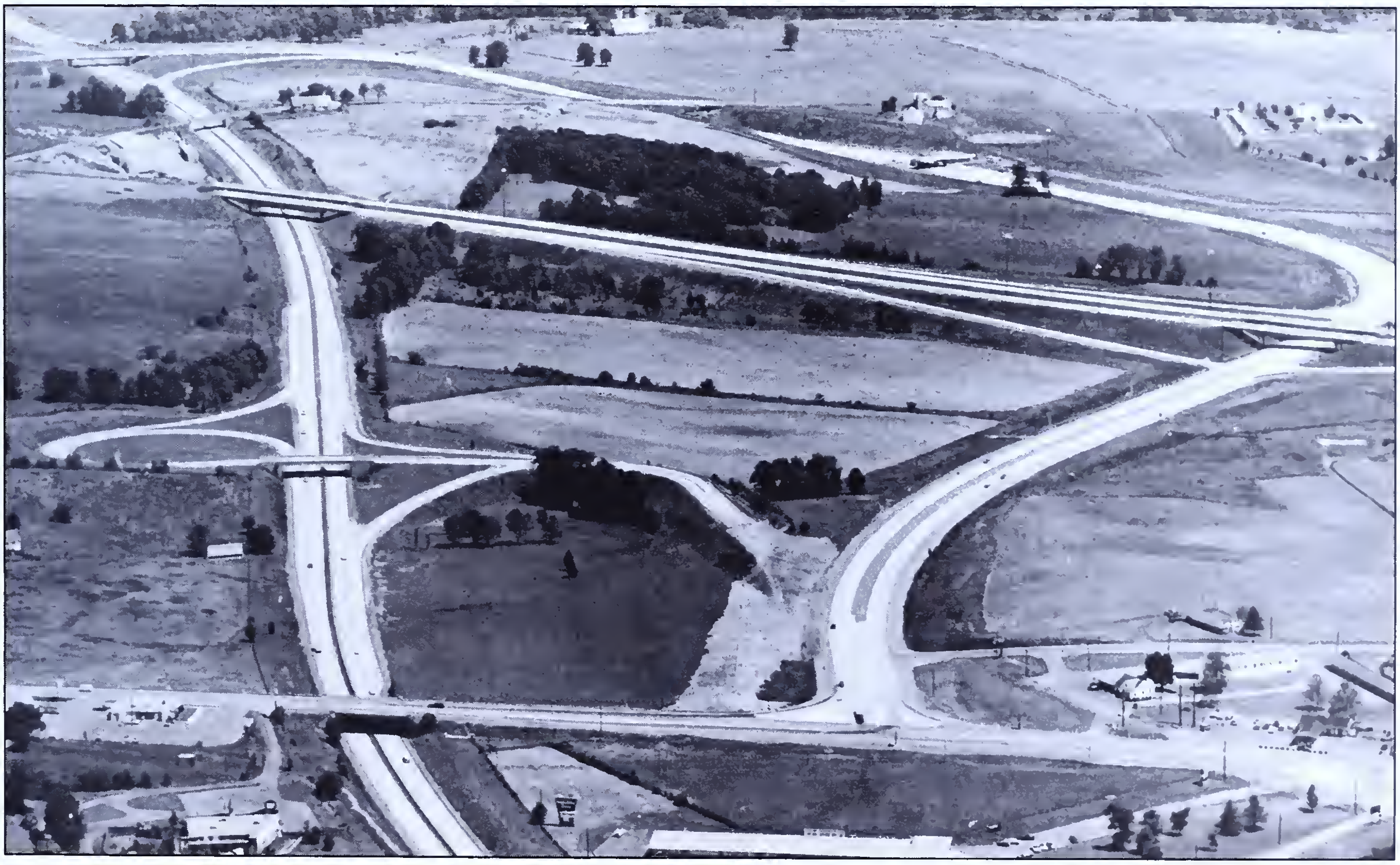
Out along the road, improvements continued, even if they were not of the 10-lane magnitude envisioned in the 1970-1990 planning document. On April 10, 1974, the all-new Reading-Lancaster replacement interchange was opened.

Left: The Midway service plaza, largest of the original restaurants, would have been replaced in the proposed billion-dollar modernization. PTC



Eight lanes—four for cars, four for trucks—were envisioned in the proposed revamping of the original 160-mile section. PTC

On August 1, 1978, the commission increased tolls, with the rate for a passenger car rising from 1.9 cents a mile to 2.2 cents. By this time, with the fuel crunch easing, the commission moved ahead on plans to construct truck climbing lanes at three locations — the east approach to Allegheny Mountain tunnel, and in the Jacobs Creek area west of Donegal and the Indian Creek area west of the Laurel Hill bypass. No sooner had this work begun than a second Mideast oil-supply crisis arrived. Traffic dropped from a then-record 66 million vehicles in 1979 to 62 million in 1980. Yet the toll increase had helped keep revenues steady in a time when, according to the commission's 1980 Annual Report, "normal indicators were projecting a decline; when fuel supplies were in doubt; when highway users were paying twice as much for gasoline; and when the general economy was in a decline." Before the decade was out, the Turnpike had become such an integral part of Pennsylvania life that it surfaced in pop music culture. A rock group based near Harrisburg named itself "The Pennsylvania Turnpike." And later, radio stations began playing a country tune titled "Pennsylvania Turnpike, I Love You". Written by Vaughn Horton, it was recorded by a singing group named Dick Todd and the Appalachian Wildcats.



Construction of the new four-lane U.S. Route 222, running horizontally through the upper middle in this view, required a new set of ramps and toll booths at the Reading-Lancaster interchange. Old interchange is at near left; its replacement is at upper left. PTC

INTO THE

For the typical Turnpike traveler, the 1980s began with a change for one of the highway's oldest and most familiar institutions — the service plaza restaurants. In the early days, sit-down dining was a formal affair, and entire families dressed up and took a drive on the Turnpike to go to dinner at Howard Johnson's at the Midway plaza. A large stone two-story building east of Bedford, it contained a 120-seat dining room. The upper floor was a dormitory with sleeping space for 38 truckers, but that part had been closed in the '50s. Beginning about the same time, Ray Kroc changed the way Americans, always on the move, eat with his McDonald's Restaurants. Tastes and expectations had evolved over the years, and with the original 1940 service-plaza franchises coming due for renewal, the commission took the opportunity to bring fast food to the Turnpike on a trial basis.

By the mid-1980s the fast-food trend was well-established, and a new look came to all of the service plaza restaurants. Some locations offered travelers two choices, a popular sit-down restaurant and a fast-food outlet. Drive-through pickup windows were installed at some plazas. Among the popular names that began to appear along the Turnpike were Arby's, Burger King, Hardee's, McDonald's, Popeye's and Roy Rogers; more extensive menus were introduced by Bob's Big Boy, King's and Sbarro.

On the roadway, traffic congestion on several long grades was eased when the three truck climbing lanes were completed on December 2, 1981. The largest of these was the $28.5 million, 5.7-mile east approach to Allegheny Mountain tunnel, which involved relocation of 2.2 miles of eastbound lanes. Although the proposed 1970-1990 plan to bypass the grade had been too expensive, relief was still needed and this project was the result. Much of the original four-lane, two-directional right-of-way was converted to three-lane (one-way westbound) upgrade configuration, while a new two-lane bypass for (one-way eastbound) downgrade traffic was constructed a short distance away. Together with renovation and expansion of the interchanges at Irwin, New Stanton, Donegal, Somerset and Carlisle, the improvements cost $70 million.

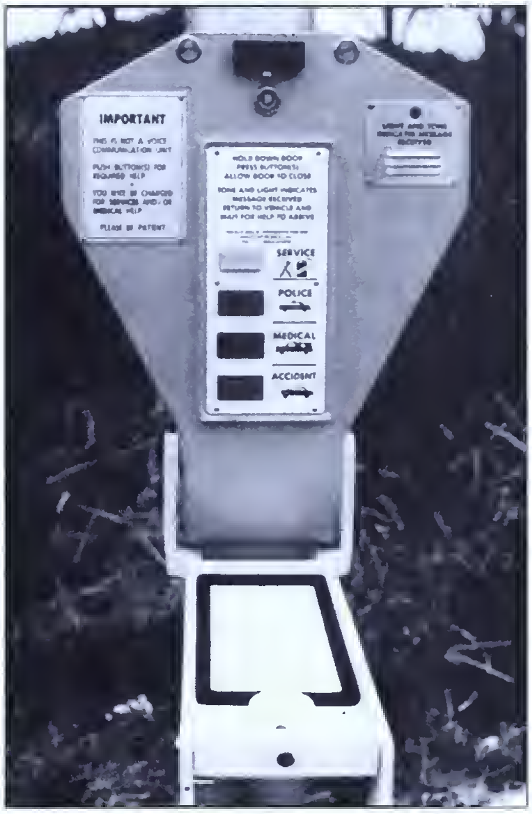
Computerization of the toll collection system was the next big step. Studies were begun in 1982 and a new system, which uses a smaller toll ticket (about 2x5 inches) than the old 3x7-inch ticket, went into effect on July 22, 1987. Containing a magnetic strip encoded with fare and other information, all tickets are dispensed automatically. The system weighs trucks both on entering and leaving, calculates the fare through a toll terminal in the booth and determines the amount due.

Another service added in the '80s was a

Traffic flows smoothly along the 12-mile straightaway east of Blue Mountain interchange. By the end of the 1980s, traffic volume in one day had reached the amount carried in an entire month by the original Turnpike.

PTC

The practical functionalism of today's hurried traveler has replaced the cozy atmosphere of the original Howard Johnson's Turnpike restaurants, reflecting shifts in the nature and extent of consumer demand. PTC



Electronic traveler-aid call-box system was tested first in western Pennsylvania, then planned for installation systemwide. PTC

system of traveler-aid call boxes. In December 1988, call boxes were installed approximately every mile between the New Stanton interchange and New Baltimore, the bottom of the grade leading up to the east portal of Allegheny Mountain tunnel. In 1989 the commission decided to expand the call-box network systemwide, beginning in the summer of 1990.

Not all changes took place on the active part of the roadway. In 1987 the commission approved a new use for the 10.3-mile abandoned roadway that resulted from the Ray's Hill-Sideling Hill bypass as a Safety Testing And Research facility, with the acronym STAR. This old section of the Turnpike, after 21 years of disuse, was in surprisingly good shape and held potential to become a major highway test facility. Sideling Hill Tunnel was used for simulated nighttime reflectivity tests, and elsewhere, a portion of the berm was altered for Sonic Nap Alert Pattern (a kind of indented rumble-strip design) tests.

But the most fundamental change of all in the 1980s came about with the passage and enactment of Act 61, which opened a new chapter of construction and expansion, bringing the first new route-mileage to the system since the Northeastern Extension was completed in 1957. The measure gave the commission broad powers to pursue several new projects. Some of these had been in planning stages for as long as a decade but were held up by financial and political factors. Others were included to complement the funding of the state highway system's construction of free roads. In any event, a political accord was reached (which also temporarily increased commission membership from five to six members). As a result, Act 61 was signed into law in 1985, a new financial trust indenture was created and the projects went forward. An $807 million bond issue was approved, and a corresponding toll increase also was put into effect. Passenger-car rates rose from 2.2 cents per mile to 3.1 cents.

An ever-rising volume of traffic made the improvements both necessary and possible. From a volume of 63 million vehicles in 1980, the figure rose to 97.4 million by 1989. The average daily traffic count of 270,000 in 1989 was 75 times the level predicted for the original Middlesex-Irwin stretch before it opened in 1940. Traffic volume reached a ceremonial milestone on October 31, 1989, when the commission welcomed West Virginia motorist William Snow, who was chosen as the road's symbolic two-billionth traveler. Bound for the Pittsburgh interchange at Monroeville, the oil salesman entered the Turnpike at the next interchange east, Irwin. Turnpike officials showered him with gifts, tourist-

Computerized toll system entered service in 1987. PTC

Tandem toll booths, shown here on two center lanes of the Valley Forge interchange, speed traffic without requiring expensive land purchases or right-of-way widening.
PTC

attraction passes and vacation vouchers contributed from businesses across Pennsylvania. However, as observers wryly pointed out, officials could not, under terms of the 1986 Trust Indenture, waive his 40-cent toll.

Groundbreaking for the second Lehigh Tunnel was held on February 14, 1989. The conventional method of excavation, used on all previous Turnpike tunnels, involved blasting sections of rock loose, followed by clearing of the debris and erection of a steel superstructure inside the tunnel cavity, with the procedure repeated until the tunnel was completed. This project, however, became the first highway job in the United States to use a technique known as the New Austrian Tunnel Method. Employed in Europe since 1950, NATM was used in two rail-transit projects in the United States — the Mount Washington tunnel of Pittsburgh's light-rail system, and the Washington Metro system. With NATM, after each blasting of rock, the tunnel roof and walls are stabilized by being sprayed immediately with a fast-hardening concrete mixture called shotcrete. This material sets instantly, preventing the rock from shifting or falling, making a steel superstructure unnecessary. The 4,380-foot-long tunnel was bored 94 feet west of the existing Lehigh Tunnel. Opening was planned for June 1991, at which time the work schedule calls for closing the original tunnel for a yearlong overhaul.

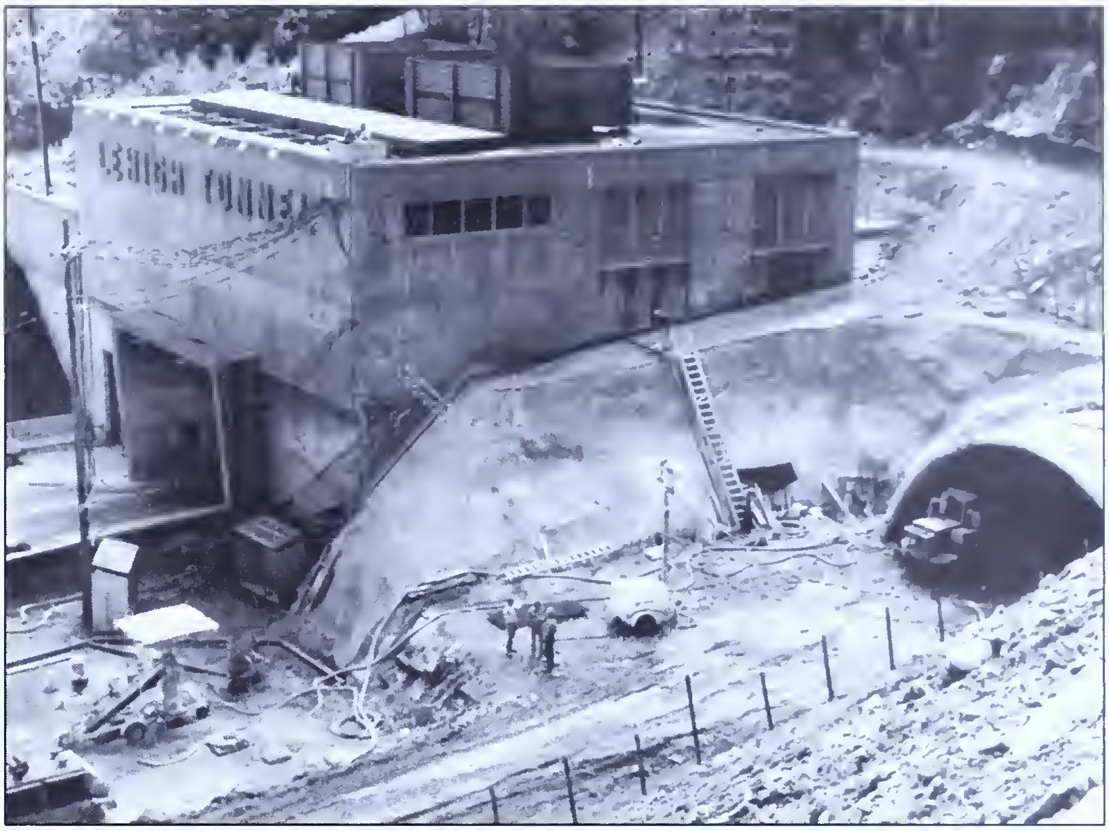
The largest single contract in Turnpike history, at $53 million, was awarded on November 9, 1989, for construction of the massive 17-lane Mid-County interchange near the existing Norristown interchange. As the largest interchange on the Turnpike, it was designed to tie together the Turnpike main line, the Northeastern Extension and Interstate 476, the long-awaited 21.5-mile north-south Blue Route through Montgomery County west of Philadelphia. Ground was broken on December 19, 1989.

Tandem toll booths — two toll booths along a single exit lane at an interchange — were implemented at two Philadelphia-area locations: Valley Forge in 1988 and Willow Grove in 1989. With double the number of collectors on a lane, commuter traffic can move through the toll plaza more quickly, cutting down on congestion and skirting the need to consider costly alternatives such as adding more lanes.

The first Act 61 roadway construction work initiated by the commission was a $120 million project to widen part of the Turnpike main line near Philadelphia to six lanes. On March 10, 1986, work began on a 17-mile stretch between the Philadelphia interchange and the Northeastern Extension junction, and it was opened on November 23, 1987. This was preceded by improvements in interchanges at Fort Washington, Willow Grove and Philadelphia that anticipated the six-lane widening.

Construction of a second tube at Lehigh Tunnel on the Northeastern Extension — to eliminate the last remaining stretch of two-lane roadway on the Turnpike — was set when the commission awarded a $37 million contract in 1988. The growing popularity of recreational opportunities in the Poconos — primarily among hikers, skiers and Pocono Downs racetrack spectators — had boosted monthly traffic volume to 200,000 cars and 30,000 vans and trucks. In August, the busiest month, more than 22,000 vehicles a day passed through the tunnel, resulting in traffic backups of two to four miles.

But southeastern Pennsylvania wasn't the only locale for proposed improvements and extensions in the late 1980s. Several shorter extensions were planned, to improve access to and from economically distressed areas. Groundbreaking was held in the fall of 1989 for the first of three proposed Western Pennsylvania north-south extensions, the Beaver Valley Expressway. This highway was designed to extend for 16.5 miles from U.S. Route 422 at New Castle to a connection with Route 60 near Beaver Falls, tying into the Turnpike main line just west of the existing Beaver Valley interchange. Among its chief benefits is to offer a direct gateway from the Lawrence-Beaver county region and the Turnpike main line to Greater Pittsburgh International Airport. Ground was broken on the project on October 20, 1989, at the $20.9 million, 1,700-foot-long Mahoning River Bridge near New Castle.



Lehigh Tunnel, last two-lane section of Turnpike, is being widened with addition of a second tube, using New Austrian Tunnel Method. PTC

Members of the tunneling crew who are using NATM at Lehigh Tunnel pause for a portrait. Crew members came from around the world. PTC

The Greensburg Bypass will connect U.S. Route 119 at the New Stanton interchange with U.S. Route 30 west of Greensburg and U.S. Route 22 near Delmont, a distance of about 13 miles. And the Mon Valley-Fayette Expressway will ultimately link Pittsburgh with Morgantown, West Virginia.

Work began in 1989 on an eastbound truck climbing lane on the Turnpike main line just east of the Beaver Valley river bridge. Other projects that entered either the feasibility-study or preliminary-design phase as the decade ended were: Construction of a Keyser Avenue interchange near Scranton on the Northeastern Extension; construction of a direct interchange with New Cumberland Army Depot, which lies adjacent to the Turnpike main line in York County near Harrisburg; and a proposed direct connection with Interstate 95 near the Delaware Valley interchange.

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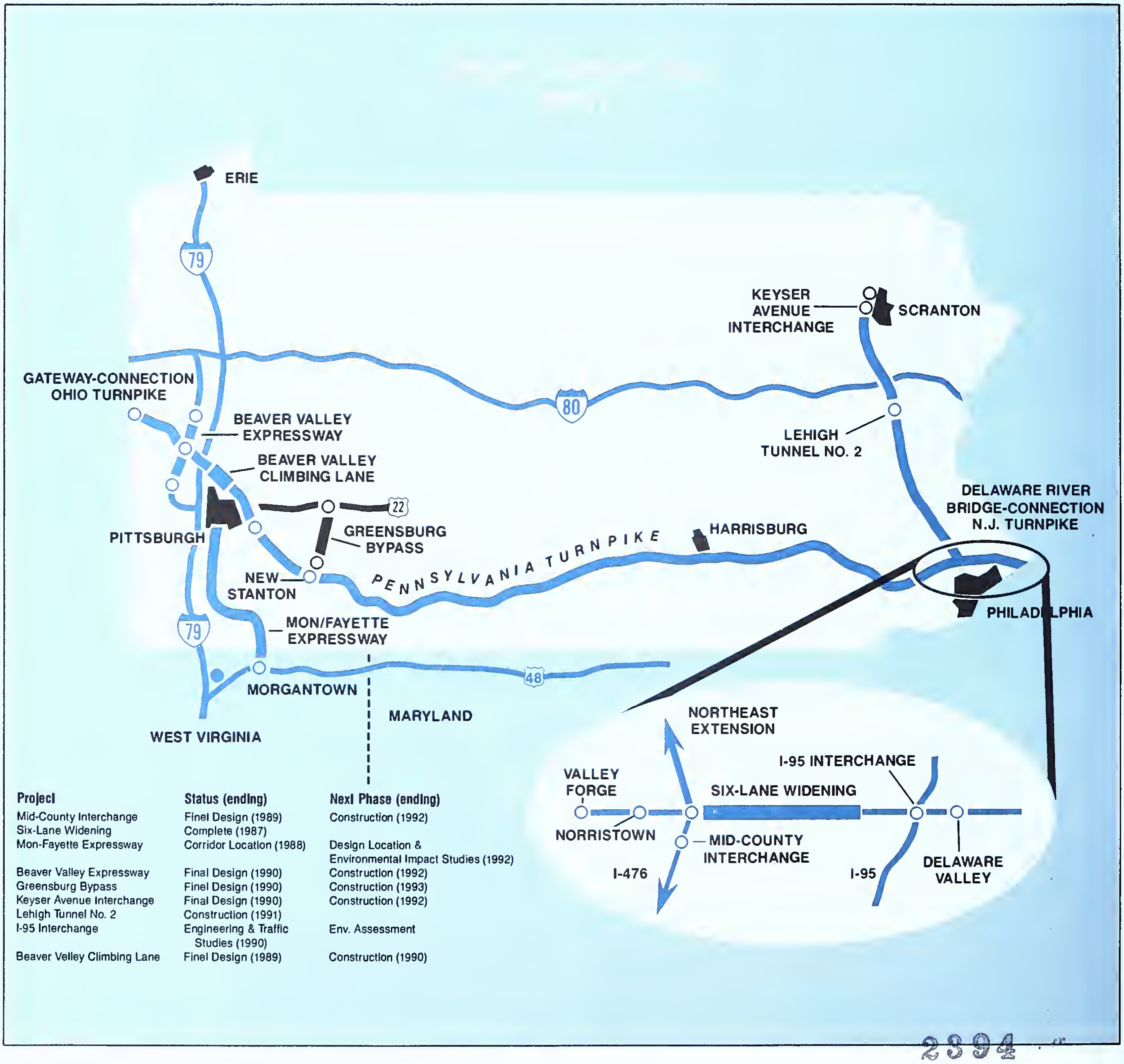
Epilogue

As the Turnpike enters its second half-century, toll roads are enjoying a revival on a scale unknown since the days immediately after World War II, when other states looked to Pennsylvania for toll-road leadership. Nearly all of the federal Interstate highway system has been completed, both nationwide and in Pennsylvania, and in the coming decades, already stretched public tax dollars will be spent more to preserve existing highways than to embark on giant new projects. And with the rise of environmental and social concerns over any plan to locate new right-of-way, America will likely never again see the pace and scale of public highway construction of the 1950s and 1960s.

Yet to maintain the quality of life and the fluidity of commerce, better roads — safer roads, less congested roads — are needed. Toll roads, and the Pennsylvania Turnpike, have come full circle.



Project	Status (ending)	Next Phase (ending)
Mid-County Interchange	Final Design (1989)	Construction (1992)
Six-Lane Widening	Complete (1987)	
Mon-Fayette Expressway	Corridor Location (1988)	Design Location & Environmental Impact Studies (1992)
Beaver Valley Expressway	Final Design (1990)	Construction (1992)
Greensburg Bypass	Final Design (1990)	Construction (1993)
Keyser Avenue Interchange	Final Design (1990)	Construction (1992)
Lehigh Tunnel No. 2	Construction (1991)	
I-95 Interchange	Engineering & Traffic Studies (1990)	Env. Assessment
Beaver Valley Climbing Lane	Final Design (1989)	Construction (1990)

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Turnpike Commission Members

Walter A. Jones*	June 4, 1937 to September 1, 1943
Frank Bebout	June 4, 1937 to August 22, 1940
Charles T. Carpenter	June 4, 1937 to April 30, 1941
Samuel W. Marshall	June 4, 1937 to June 16, 1937
Thomas J. Evans*	May 17, 1939 to July 1, 1955
James J. Coyne	July 22, 1943 to June 4, 1953
Edward N. Jones	July 22, 1943 to February 29, 1952
James F. Torrance	September 1, 1943 to June 9, 1957
David E. Watson	March 4, 1952 to November 24, 1956
G. Franklin McSorley*	February 21, 1955 to July 7, 1959
John F. Byrne	May 23, 1956 to August 6, 1965
Merritt A. Williamson	January 29, 1957 to October 1, 1957
E. James Trimarchi Jr.	October 2, 1957 to April 10, 1961
Joseph J. Lawler*	October 2, 1957 to June 4, 1967
Roy E. Furman	July 13, 1959 to August 2, 1963
Patrick E. Kerwin	August 22, 1961 to October 24, 1972
Lester F. Burlein*	August 2, 1963 to December 31, 1973
William A. Meehan	November 16, 1966 to July 8, 1975
Ray M. Bollinger	November 21, 1966 to November 27, 1981
Abraham D. Cohn	October 24, 1972 to January 3, 1975
Egidio Cerilli*	December 31, 1973 to June 4, 1978
Jack I. Greenblat*	January 4, 1975 to March 27, 1984
Peter J. Camiel +	July 11, 1975
James J. Dodaro +	March 27, 1984
Frank A. Ursomarso +	March 27, 1984
James A. Goodman	October 1, 1985 to June 5, 1987
James F. Malone +	October 1, 1985

Pennsylvania Secretaries of Highways who have served ex-officio as members of the Pennsylvania Turnpike Commission:

Warren Van Dyke
Roy E. Brownmiller
I. Lamont Hughes
John W. Schroyer
Ray F. Smock
Edward L. Schmidt
Joseph J. Lawler
Lewis M. Stevens
Park H. Martin
Henry D. Harral
Robert G. Bartlett

Pennsylvania Secretaries of Transportation who have served ex-officio as members of the Pennsylvania Turnpike Commission:

Victor W. Anckaitis
Jacob G. Kassab
William H. Sherlock
James B. Wilson
George S. Pulakos
Thomas D. Larson
Howard Yerusalim* +

**Chairman* *+ Current (1990) member*